



USF

University of South Florida

GRADUATE CATALOG

1993-94

Special Collections
Department
University of
South Florida

UNIVERSITY OF SOUTH FLORIDA

GRADUATE CATALOG

Events, activities, programs and facilities of the University of South Florida are available to all without regard to race, color, sex, religion, national origin, handicap or age as provided by law and in accordance with the University's respect for personal dignity.



About the Cover

Featured on the cover is part of the fossil, mineral, and shell collection donated to the University of South Florida by Jess and William Pious. It is one of ten major collections on display in the Pious Museum located in the Department of Geology. In addition, the museum houses the Haas Mineral Collection which was donated by the St. Petersburg Historical Society.

On the cover from the upper left:

- 1) Cretaceous Ammonite from Wyoming, 144-66.4 million years old
- 2) Jurassic Ammonities from England, 208-144 million years old
- 3) Cretaceous Ammonite from Wyoming, 144-66.4 million years old
- 4) Pennsylvanian coal fern from Illinois, 320-286 million years old
- 5) Eocene fish from Wyoming, 57.8-36.6 million years old
- 6) Ordovician Trilobites from Ohio, 505-438 million years old
- 7) Ammonite from Wyoming, 100 million years old
- 8) Eocene leaves from Wyoming, 57.8-36.6 million years old

The museum is used for seminars and as a conference room for the College of Arts and Sciences. It is open to the public by appointment through the Geology Department.

TABLE OF CONTENTS

ACADEMIC CALENDAR	iv
COMMUNICATING WITH THE UNIVERSITY	vii
A UNIVERSITY WHOSE TIME HAS COME	1
FIELDS OF GRADUATE STUDY	3
ORGANIZATION AND PERSONNEL	5
Administration of State Universities	5
University Of South Florida	5
USF: A MODERN METROPOLITAN ENVIRONMENT	7
GRADUATE ADMISSIONS & RELATED MATTERS	13
Admission to Graduate Study	13
Financial Assistance	17
ACADEMIC POLICIES AND PROCEDURES, PROGRAMS AND SERVICES	21
General Academic Regulations and Information	21
Grades and Scholarship Requirements	22
University Graduate Policies and Procedures	23
Graduate Degree Programs	25
Academic Services and Support	29
FINANCIAL INFORMATION	33
STUDENT SERVICES & STUDENT AFFAIRS	37
ARCHITECTURE PROGRAM	45
COLLEGE OF ARTS AND SCIENCES	47
American Studies	48
Anthropology	48
Biology	50
Chemistry	52
Classics	54
Communication	54
Communication Sciences and Disorders	56
Criminology	58
English	58
Geography	60
Geology	61
Gerontology	61
History	63
Humanities	63
Master of Liberal Arts	64
Library and Information Science	64
Marine Science	65
Mass Communications	67
Mathematics	67
Modern Languages and Linguistics	69
Philosophy	71
Physics	72

Political Science	73
Psychology	75
Public Administration	75
Rehabilitation Counseling	79
Religious Studies	80
Social Work	80
Sociology	82
COLLEGE OF BUSINESS ADMINISTRATION	85
Master of Business Administration Degree	88
M.B.A. Course Structure	89
M.B.A. with Concentration in International Business	90
M.B.A. with Concentration in Finance	90
M.B.A. with Concentration in Management Information Systems	91
M.B.A. with Concentration in Marketing	91
Master of Accountancy	91
Executive M.B.A.	92
M.B.A. Program for Physicians	93
Master of Arts (M.A.) Degree in Economics	94
Master of Science (M.S.) Degree in Management	94
Organizations and Centers	96
COLLEGE OF EDUCATION	99
Advanced Graduate Education	102
Adult and Vocational Education	104
Childhood/Language Arts/Reading Education	105
Educational Leadership	108
Junior College Teaching Program	109
Educational Measurement and Research	110
Music Education	111
Psychological and Social Foundations of Education	111
Counselor Education	111
School Psychology	114
Secondary Education	117
Art Education	118
English Education	119
Foreign Language Education	119
Instructional Technology	119
Mathematics Education	120
Science Education	120
Social Science Education	120
Theatre Education	120
Special Education	121
Student Organizations and Activities	124
COLLEGE OF ENGINEERING	127
Master of Science in Engineering	128
Doctoral Programs	129
Chemical Engineering	131
Civil Engineering and Mechanics	132
Solid and Hazardous Waste Management	133
Computer Science and Engineering	133
Electrical Engineering	134
Industrial and Management Systems Engineering	134
Mechanical Engineering	135
COLLEGE OF FINE ARTS	141
Program Descriptions	142
Art	142

Music	144
COLLEGE OF MEDICINE	147
Graduate Degree Programs	147
Major Research Areas	148
COLLEGE OF NURSING	151
Philosophy of Nursing	151
COLLEGE OF PUBLIC HEALTH	155
Community and Family Health	158
Epidemiology and Biostatistics	161
Environmental and Occupational Health	163
Health Policy and Management	165
Master of Public Health	166
Master of Science in Public Health	167
Master of Health Administration	167
COURSE DESCRIPTIONS	169
Architecture	169
Arts and Sciences	172
Business Administration	223
Education	233
Engineering	256
Fine Arts	273
Medicine	278
Nursing	283
Public Health	287
INDEX	296

ACADEMIC CALENDAR

Spring Semester, 1993

October 26, 1992	Mon	Admissions Application Deadline for Spring 1993 (except International Students)
November - December		Contact Registrar's Office for Early/Telephone registration schedule
January 7, 1993	Thur	Classes Begin
January 13	Wed	Last day to withdraw/drop and receive full refund of registration fees
January 13	Wed	Last day to add courses
January 13	Wed	Last day for late registration
January 13	Wed	Last day to pay fees
January 18	Mon	Martin Luther King Holiday
February 5	Fri	Graduation Application Deadline
March 10	Wed	Last day to drop or withdraw from courses without academic penalty
March 15-19	Mon-Fri	Spring Semester Break
April 7	Wed	Last day to submit dissertations
April 21	Wed	Last day to submit thesis/Ed.S. projects
April 26	Mon	Classes End
April 27-30	Tue-Fri	Final Examinations
May 1 & 3	Sat & Mon	Final Examinations
May 4		Commencement (Tampa)
May 5		Commencement (St. Petersburg)
May 6		Commencement (Ft. Myers)
May 7		Commencement (Sarasota)

Summer Term, 1993

Session A (First Six - Week Session)

January 4	Mon	Last day for international applicants to apply for admission and submit all required credentials and supporting documents
March 8	Mon	Last day for graduate students to apply for admission (except international students)
May 12	Wed	Classes begin
May 18	Tue	Last day to withdraw/drop and receive full refund of registration fees
May 18	Tue	Last day to add courses
May 18	Tue	Last day for late registration
May 18	Tue	Last day to pay fees
May 31	Mon	Memorial Day Holiday
June 1	Tue	Last day to drop/withdraw from courses without Academic Penalty
June 11	Fri	Graduation Application Deadline
June 22	Tue	Last day of classes
June 23-29	Wed-Tue	Summer Break between Sessions A & B

Session B (Second Six - Week Session)

January 4	Mon	Last day for international applicants to apply for admission and submit all required credentials and supporting documents
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March 8	Mon	Last day for graduate students to apply for admissions (except international students)
June 11	Fri	Graduation Application Deadline
June 30	Wed	Classes Begin
July 5	Mon	Independence Day Holiday
July 6	Tue	Last day to withdraw/drop and receive full refund of registration fees
July 6	Tue	Last day to add courses
July 6	Tue	Last day for late registration
July 6	Tue	Last day to pay fees
July 20	Tue	Last day to drop/withdraw from courses without academic penalty
August 5	Thur	Last day to submit dissertations
August 10	Tue	Last day of classes
August 16	Mon	Last day to submit theses/Ed.S. projects

Session C (Ten Week - Session)

January 4	Mon	Last day for international applicants to apply for admission and submit all required credentials and supporting documents
March 8	Mon	Last day for graduate students to apply for admissions (except international students)
May 12	Wed	Classes begin
May 18	Tue	Last day to withdraw/drop and receive full refund of registration fees
May 18	Tue	Last day to add courses
May 18	Tue	Last day for late registration
May 18	Tue	Last day to pay fees
May 31	Mon	Memorial Day Holiday
June 11	Fri	Graduation Application Deadline
June 22	Tue	Last day to drop/withdraw from courses without Academic Penalty
July 5	Mon	Independence Day Holiday
July 20	Tue	Last day of classes

Fall Semester, 1993

March 1	Mon	Last day for international applicants to apply for admission and submit all required credentials and documents
June 1	Tue	Last day for graduate students to apply for admission (except for international students)
August 23	Mon	Classes begin
August 27	Fri	Last day to withdraw/drop and receive full refund of registration fees
August 27	Fri	Last day to add courses
August 27	Fri	Last day for late registration
August 27	Fri	Last day to pay fees
September 6	Mon	Labor Day Holiday
September 17	Fri	Graduation Application Deadline
October 15	Fri	Honors Convocation (Classes Canceled 2-5 P.M.)
October 22	Fri	Last day to drop/withdraw from courses without academic penalty
November 11	Thur	Veteran's Day Holiday
November 17	Wed	Last day to submit dissertations
November 25-26	Thur-Fri	Thanksgiving Holidays
December 1	Thur	Last day to submit theses/Ed.S. projects
December 7	Tue	Classes End

December 8-11	Wed-Sat	Final Examinations
December 13-14	Mon-Tue	Final Examinations
December 15	Wed	Commencement (Tampa)
December 24	Fri	Christmas Holiday

Spring Semester, 1994

August 2	Mon	Last day for international applicants to apply for admission and submit all required credentials and supporting documents
October 25	Mon	Last day for graduate students to apply for admission (except international students)
January 6, 1994	Thur	Classes begin
January 12	Wed	Last day to withdraw/drop and receive full refund of registration fees
January 12	Wed	Last day to add courses
January 12	Wed	Last day for late registration
January 12	Wed	Last day to pay fees
January 17	Mon	Martin Luther King Holiday
February 4	Fri	Graduation Application Deadline
March 9	Wed	Last day to drop/withdraw from courses without academic penalty
March 14-18	Mon-Fri	Spring Semester Break
April 8	Fri	Last day to submit dissertations
April 22	Fri	Last day to submit these/Ed.S. projects
April 25	Mon	Classes End
April 26-30	Tue-Sat	Final Examinations
May 2	Mon	Final Examinations
May 3	Tue	Commencement (Tampa)
May 4	Wed	Commencement (St. Petersburg)
May 5	Thur	Commencement (Ft. Myers)
May 6	Fri	Commencement (Sarasota)

COMMUNICATING WITH THE UNIVERSITY

Academic Advising	
Office of the Dean of the appropriate College	
Applications and Admissions	
Office of Graduate Admissions, SVC 1036	974-3350
College of Medicine: Director of Admissions, MDC Box 3	974-2229
Career Development	
Counseling Center for Human Development, SVC 2124	974-2831
Career Resource Center	
Alumni Placement Services, SVC 2088	974-2171
Career Planning and Advising, SVC 2088	974-2171
Continuing Education Courses	
Registration, SVC 1034	974-2000
Conferences and Institutes, EXS 012	974-2403
Counseling	
Counseling Center for Human Development, SVC 2124	974-2831
Disabled Student Academic Services	
Coordinator of Disabled Students, SVC 2043 --- VOICE/TTY	974-4309
Financial Assistance (scholarships, loans, employment)	
Office of Financial Aid, SVC 1102	974-4700
Office of Student Employment, SVC 1102	974-2297
Graduate Studies	
Graduate School, FAO 126	974-2846
Health Services	
Health Center, CTR 312	974-2331
Housing: Campus Residence Halls	
Office of Housing and Food Service, RAR 234	974-4310
Housing: Off-Campus	
Student Government Office, CTR 203	974-2401
International Students	
Office of Student Affairs CTR 240	974-5102
Library Resources:	
Library Information, LIB 122	974-2727
Tampa Campus: Director of Libraries, LIB 207	974-2721
Fort Myers Campus: ECC/USF Learning Resources Center	489-9220
St. Petersburg Campus: University Librarian, POY 118	893-9125
Sarasota Campus: Office of the Librarian	359-4300
Minority Student Advising	
Graduate School, FAO 126	974-2846
Parking and Traffic Services	
University Police Department, UPB 001	974-3990
Records, Registration	
Office of the Registrar, SVC 1034	974-2000
Student Affairs	
Office of Student Affairs, ADM 151	974-2151
Transcripts (USF)	
Office of the Registrar, SVC 1034	974-2000
Veterans Services	
Office of Veterans Services, SVC 2127	974-2291

A UNIVERSITY WHOSE TIME HAS COME

The University of South Florida is a comprehensive metropolitan university: in its student body, its faculty, service, and its diversity and range of academic programs. USF graduate students may enroll in three specialist, 80 master's, and 21 doctoral programs.

Higher education has entered an era in which the traditional role of universities is expanding to include students with a variety of goals and objectives and to provide more services to the communities that support them. Many academic institutions are beginning to shift toward a more comprehensive mission. USF was founded precisely with this sense of purpose and in a short time, it has become an intellectual and cultural force of international standing.

USF is located in a metropolitan setting and is at the heart of an increasingly complex urban society, thereby making its educational resources available to a large number of people. Simultaneously, students and faculty become part of the cultural framework of an educationally fertile urban environment. The resulting "give and take" has encouraged the University to a level of excellence and diversity matched by few institutions in so short a time.

The University's goal for the next decade is "to achieve preeminence as a comprehensive university dedicated to the pursuit of academic excellence". It will place increasing emphasis upon advanced graduate and professional studies during the next 10 years. Because it serves a densely populated community, USF places particular emphasis upon the instructional, research, and service needs of its metropolitan areas.

Because USF believes that the best faculty is one where individuals strike a balance between teaching and scholarly research, students are taught by dedicated teachers who are actively pioneering research in their disciplines.

In a typical year, USF's faculty generates more than \$50 million in sponsored research, much of it concerned with problems affecting the nation's environment and quality of life. Graduate students are expected to contribute assistance and original research in their areas of interest, and the opportunities to accomplish this are as many and varied as the students themselves.

The University of South Florida was founded on December 18, 1956, but the first students did not enroll until Fall, 1960. When USF opened to a charter class of 1,997 students, it became the first major state university in America planned and built in this century. The State University System (SUS), directed by the Florida Board of Regents and administered by a Chancellor and staff in Tallahassee, consists of 9 public universities. Together with 28 public junior and community colleges and a number of vocational-technical centers throughout the state, these institutions comprise public post-secondary education in Florida.

Multiple campuses of USF were opened in St. Petersburg (1965), Fort Myers (1974), and Sarasota (1975), and a center was opened in Lakeland in 1987.

Dr. John S. Allen, astronomer and educator, served as USF's first president from 1957 to 1970. Dr. Cecil Mackey, economist and lawyer, was president from 1971 to 1976. Dr. John Lott Brown, psychologist and optical scientist, served as our third president from 1978 to 1988. Dr. Francis T. Borkowski, musician and educator, became our fourth president on February 15, 1988. Continuity in administration has been provided by Dr. Harris W. Dean, acting president, 1970; Wm. Reece Smith, Jr., interim president, 1976; Dr. Carl D. Riggs, acting president, 1977.

Now in its 33th year, USF has graduated more than 105,000 students. Enrollment in the fall of 1992 totalled more than 33,000. The University's economic impact on the area is equally significant, now exceeding \$330 million annually.

Programs Offered

A measure of the University's success is the nature of its academic programs. Through them, USF seeks to serve an increasingly urban state and nation. These programs are in the Academic Affairs division and, for the most part, are administered in one of 8 colleges.

Degrees are offered in more than 100 academic areas and Graduate degrees are offered in more than 80 of these. In addition, a Master of Architecture degree is offered in cooperation with Florida A&M University.

The University's first Ph.D. program, in Biology, was established in 1968. Since then, Ph.D. programs have been established in Applied Anthropology, Business Administration, Chemical Engineering, Chemistry, Civil Engineering, Computer Engineering, Communication, Education, Electrical Engineering, English, Engineering Science, Industrial Engineering, Marine Science, Mathematics, Mechanical Engineering, Medical Sciences, Philosophy, Psychology and Public Health. USF also offers the Ed.D. in Education.

The University's teaching and research faculty, currently number more than 1,100.

Accreditation

USF was fully accredited in 1965 by the Southern Association of Colleges and Schools, the official accrediting agency for educational institutions in the South. A self-study of the University's programs and purposes, periodically required for continued accreditation, was reaffirmed in December, 1984. The University continues to reexamine its mission and goals to ensure that it never loses sight of its only reason for existence: serving you, the student.

FIELDS OF GRADUATE STUDY

Master's Degree Programs

College of Arts & Sciences

American Studies - M.A.	French - M.A.	Physics - M.S.
Anthropology - M.A.	Geography - M.A.	Political Science - M.A.
Applied Anthropology - M.A.	Geology - M.S.	Psychology - M.A.
Applied Linguistics (ESL) - M.A.	Gerontology - M.A.	Public Admin. - M.P.A.
Audiology - M.S.	History - M.A.	Rehabilitation Counseling - M.A.
Aural Rehabilitation - M.S.	Liberal Arts - M.L.A.	Religious Studies - M.A.
Botany - M.S.	Linguistics - M.A.	Social Work - M.S.W.
Chemistry - M.A., M.S.	Marine Science - M.S.	Sociology - M.A.
Classics (Cooperative, UF) - M.A.	Mass Comm. - M.A.	Spanish - M.A.
Communication - M.A.	Mathematics - M.A.	Speech-Language - M.S.
Criminology - M.A.	Microbiology - M.S.	Zoology - M.S.
English - M.A.	Philosophy - M.A.	
	Library & Information Science - M.A.	

College of Business Administration

Accountancy - M.Acc.	Business Administration - M.B.A.	Executive M.B.A.
Economics - M.A.	M.B.A. Program for Physicians	Management - M.S.

College of Education

Adult & Vocational Education - M.A.			
Adult Education	Business & Office Education		Distributive Education
Industrial - Technical Education			
Art Education - M.A.			
Counselor Education - M.A.			
Curriculum & Instruction - M.Ed.			
Educational Leadership - M.Ed.			
Elementary Education - M.A.			
English Education - M.A.			
Foreign Language - M.A. (French, German, Spanish)			
Instructional Technology - M.Ed.			
Junior College Teaching - M.A.			
Biology	Business	Chemistry	Economics
Engineering	English	French	Geography
Geology	History	Mathematics	Physics
Political Science	Sociology	Spanish	Speech Communication
Mathematics Education - M.A.			
Music Education - M.A.			
Physical Education - M.A.			
Reading Education - M.A.			
Science Education - M.A. (Biology, Chemistry, Physics)			
Social Science Education - M.A.			
Special Education - M.A.			
Behavior Disorders	Gifted		Varying Exceptionalities
Mental Retardation	Specific Learning Disabilities		

College of Engineering

Chemical Engineering - M.E., M.S.Ch.E.	Civil Engineering - M.E., M.C.E., M.S.C.E.
Computer Engineering - M.E., M.S.Cp.E.	Computer Science - M.E., M.S.C.S.
Electrical Engineering - M.E., M.E.E., M.S.E.E.	
Engineering - M.S.E.	Engineering Management - M.S.E.M
Engineering Science - M.S.E.S.	Industrial Engineering - M.E., M.I.E., M.S.I.E.
Information Systems - M.E., M.S.I.S.	
Mechanical Engineering - M.E., M.M.E., M.S.M.E.	

College of Fine Arts

Art - M.F.A.

Art History - M.A.

Music - M.M.

College of Nursing

Nursing - M.S.

College of Public Health

Health Administration - M.H.A.

Public Health - M.P.H., M.S.P.H.

Environmental/Occupational Health

Health Policy and Management

Community and Family Health

Epidemiology & Biostatistics

Architecture Program

Architecture - M.Arch.

Intermediate Program

College of Education

Educational Leadership - Ed.S.

School Psychology - Ed.S.

Curriculum and Instruction - Ed.S.

Doctoral Degree Programs

College of Arts & Sciences - Ph.D.

Applied Anthropology

Biology

Chemistry

Communication

English

Marine Science

Mathematics

Philosophy

Psychology

College of Business Administration - Ph.D.

Business Administration

College of Education

Educational Leadership - Ed.D.

Educational Program Development - Ed.D.

Curriculum and Instruction - Ph.D.

College of Engineering - Ph.D.

Chemical

Civil

Computer Science

Electrical

Engineering Science

Industrial

Mechanical

College of Medicine - Ph.D.

Medical Sciences

College of Public Health - Ph.D.

Public Health

ORGANIZATION AND PERSONNEL

Administration of State Universities

State Board Of Education

LAWTON CHILES
Governor
DOYLE E. CONNER
Commissioner of Agriculture
GERALD A. LEWIS
Comptroller
TOM GALLAGHER
State Treasurer

BOB BUTTERWORTH
Attorney General
JIM SMITH
Secretary of State
BETTY CASTOR
Commissioner of Education

State Board Of Regents

J. CLINT BROWN, Chairman (1994)*
Tampa
DUBOSE AUSLEY (1998)*
Tallahassee
THOMAS F. PETWAY, III (1995)*
Jacksonville
ROBERT A. DRESSLER (1993)*
Fort Lauderdale
PAT N. GRONER (1993)*
Pensacola
PERLA HANTMAN (1996)*
Miami Lakes
JON C. MOYLE (1997)*
West Palm Beach
SEAN PITTMAN
Student Regent
*(Term expires)

ALEC P. COURTELIS (1994)*
Miami
CAROLYN K. ROBERTS (1995)*
Ocala
BETTY CASTOR
Tallahassee
JAMES F. HEEKIN, JR. (1997)*
Orlando
CECIL B. KEENE (1993)*
St. Petersburg
CHARLES B. EDWARDS (1993)*
Fort Myers
CHARLES B. REED
Chancellor

University Of South Florida

President

FRANCIS T. BORKOWSKI

Academic Affairs

Provost

GERRY G. MEISELS

Graduate School

Interim Dean of the Graduate School

RICHARD L. MANSELL

College Graduate Program Coordinators

Architecture Program
College of Arts and Sciences
College of Business Administration
College of Education
College of Engineering
College of Fine Arts
College of Medicine
College of Nursing
College of Public Health

Alex Ratensky
Curtis W. Wienker
Robert Anderson
Evelyn F. Searls
Melvin W. Anderson
Virginia A. Bridges
Joseph Krzanowski
Patricia A. Gorzka
Rita G. Bruce

USF: A MODERN METROPOLITAN ENVIRONMENT

USF serves the higher education needs of Florida's west coast. More than three million people in a sixteen-county region live within commuting distance to at least one of the five campuses.

The Tampa campus occupies a 1,700-acre tract ten miles northeast of downtown, the commercial and cultural hub for the one million citizens of Hillsborough County.

In addition to serving the traditional student, the University offers educational opportunities for working professionals seeking advanced degrees, and to non-degree seeking students wishing to satisfy teacher certification requirements or other professional criteria.

The atmosphere on campus is one of informality. Students and faculty dress casually and enjoy an unusually close relationship for so large a school. Most buildings have open hallways, which blend colorful interiors with spacious exteriors, suggesting the casual accessibility that has become USF's trademark.

The University has facilities for persons with disabilities and encourages their enrollment and all academic programs, organizations, and activities are available to disabled students.

Academic Programs of USF Campuses at Lakeland, Fort Myers, Sarasota, and St. Petersburg

The academic programs of these campuses are designed to serve students of junior, senior, and graduate standing. Classes are offered at times adapted to the special needs of these students, most of whom are residents in the area and are employed in full or part-time jobs. Selected courses and programs are offered by the Colleges of Arts and Sciences, Business Administration, Education, Engineering, and Nursing. Students may enroll part-time or full-time on any of the campuses, and may also enroll on more than one USF campus simultaneously.

Resident faculty members and Student Affairs staff provide social, vocational, and academic counseling to all students. The resident staff of each campus is supplemented by professors and other staff members from other USF campuses, thereby bringing additional scope to academic programs and university services.

USF in **Lakeland**, the newest addition to the multi-campus complex, shares the Lakeland Center with Polk Community College. Located on County Road 540 near US Highway 98, the Lakeland Center provides educational programs to students living in Polk, Highlands, and Hardee counties.

USF at **Fort Myers** serves students at the junior, senior, and graduate levels. Undergraduate and graduate degree programs are offered in the Colleges of Business, Education, Arts and Sciences, and Nursing. Selected course offerings from other colleges within the University are also available. The campus is located on a 55-acre site adjacent to Edison Community College in south Fort Myers.

USF at **Sarasota** is an educational and cultural center of local, state, and national significance. Its mission embraces two distinct, academic programs: New College of USF and the University Programs. USF's New College is a highly selective and innovative four-year liberal arts college. The University Programs emphasize junior, senior, and graduate courses, offering degrees in Business, Education, Engineering, Arts and Sciences, and Nursing. The Sarasota Campus also has a significant responsibility for historical and environmental preservation and for the enhancement of the historic Ringling and Caples estates.

USF at Sarasota has 28 buildings, including a student center, classrooms, science laboratories, and student residences. A new \$7 million campus library and a new classroom and conference center, the latter a gift of Sarasota philanthropist Harry Sudakoff, opened in 1985.

USF at **St. Petersburg** is the second oldest campus, and has offered upper level and graduate courses since 1968. Academic programs are available in a broad variety of disciplines and cultural and recreational facilities are within easy walking distance.

The St. Petersburg Campus houses facilities for marine science research and training. The Department of Marine Science is an interdisciplinary venture involving faculty from several departments, in addition to the 24 full-time Marine Science faculty members responsible for graduate research and teaching. Probably no other marine science program has both such excellent facilities for teaching and research, and access to oceanographic vessels. The location of the campus at the central edge of the continental shelf of the Gulf Coast and in the midst of the metropolitan Sun Coast is a unique advantage. The Florida Institute of Oceanography, a research institute of the SUS, is also located on the St. Petersburg Campus.

Organized for Effectiveness

The University is organized into seven broad areas: Academic Affairs, Medical Center, Student Affairs, Administrative Affairs, Development and Alumni Affairs, the Office of Research, and University Relations. The chief administrator in each of these areas, plus the Executive Vice President and the General Counsel, comprise the President's staff. A number of other advisory bodies, including committees and organizations representing faculty, staff and students, advise and assist the President in determining policy. At USF, students' views are solicited and given serious consideration. The President is responsible, through the Chancellor, to the Florida Board of Regents for internal policy and procedures of the University. More detailed information on these matters is available in the Special Collections Room, USF Library.

Equal Opportunity Complaint Procedure

The University of South Florida is committed to the principles of Equal Educational and Employment Opportunities without regard to race, color, marital status, sex, religion, national origin, disability or age, as provided by law and in accordance with the University's respect for personal dignity.

A student or employee who believes that he or she has not been treated in accordance with the University's Equal Educational and Employment Opportunity Policy or its Policy on Sexual Harassment may file an Equal Opportunity Complaint. Additional information about these procedures may be obtained from the Office of Equal Opportunity Affairs, ADM 281, or by calling (813) 974-4373.

It is prohibited for any administrator, supervisor, or other employee of USF to take any retaliatory action against an individual who, in good faith, has made a charge, testified, assisted, or participated in any manner in an investigation, proceeding, or hearing under provisions of applicable law.

Grievance Procedure

In order to assure students the right to the redress of grievances, any student may file a question, complaint, or statement of grievance in the Graduate School, in person or in writing. They may also seek the assistance of the Student Advocate located in ADM 151, phone (813) 974-2151.

University Center

The University Center and adjacent Special Events Center is a focal point of daily activity for students, faculty, administrators, alumni, guests, and visitors. Located at the heart of campus, it is the community center of the University, offering a variety of services and programs. The U.C. seeks to add another dimension to the educational experience by providing an environment for informal association outside the classroom.

The U.C. houses a cafeteria, bake shop, Rocky's Empty Keg, computer services, organizational offices, meeting rooms, Center Studios, Game Room, study lounges, travel agency, and much more.

The Information Desk, located in the lobby, serves as the coordinating center for services and activities in the Center and the University. Services available include discount ticket sales, recorded campus tours, Tampa area bus schedules, official USF lost and found, graduation announcements, Flea Market arrangements, and current events information. The Information Desk is an official Ticketmaster outlet. An automatic teller machine is also located in the lobby. Conference facilities, including the Special Events Center, can provide meeting space for up to 1,950 persons and are available to USF organizations and departments through the UC Reservations.

The U.C. Program Office coordinates a wide variety of events for students. The U.C. A.B. (University Center Activities Board) offers students the opportunity to participate

in planning and implementing a variety of programs for the University Center. The Office of Student Organizations and Leadership Development provides services — mail, advising, promotions — to more than 175 student organizations.

Religious Organizations

The University supports campus ministries in the Episcopal Center, the Baptist Center, the ecumenical University Chapel Fellowship, and the Roman Catholic Center. The Chabad House is an active Jewish center and soon to be added is the B'nai B'rith Hillel Foundation, catering to students of all branches of Judaism.

The following student religious organizations and campus ministries are active on campus: Bahai Club, Baptist Campus Ministry, Campus Advance, Campus Bible Fellowship, Episcopal Center, Catholic Center, Chabad House, Christian Science Organization, Friends of Israel Gospel Ministry, Intercollegiate Adventist Student Fellowship, Hillel, Navigators, New Testament Christians, Transdenominational Prayer Group, and University Chapel Fellowship.

Service and Resource

The many service organizations at USF contribute volunteer services to the University and the Tampa Bay area. These service and resource organizations are the Gospel Choir, Ambassadors, Amnesty International, Bacchus, Black Student Union, Campus Compact Tutorial/Mentoring Program, Circle K, Everywoman's Center, Eco-Vision Recycling Service, FPIRG Local Board, Gay/Lesbian Coalition, Greek Week Committee, Para-professional Counseling Center, Senior Class Committee, Student Organizations Advisory Board, Sun Dolls, and the University Center Activities Board.

PROFESSIONAL, ACADEMIC AND DEPARTMENTAL The professional societies at USF include Delta Sigma Pi, Minority Graduate/Professional Student Organization, Pi Sigma Epsilon, Pre-Law Society, Pre-Med Society, and the Pre-Veterinary Club. Academic and departmental organizations are categorized by college. **Arts and Sciences:** The Advertising Club, Affiliated Chapter of The American Chemical Society, AIME/Geology Club, Anthropology Club, Association of Medical Science Graduate Students, Classics Society, Communications Council, Geography Club, German Club, Language and Hearing Association, Public Relations Student Society of America, Readers Theatre Guild, Sociology Club, and the Student Microbiology Association. **Business Administration:** Graduate Business Association, Management Information Systems Society, Minorities in Business Association, and the Student Finance Association. **Education:** The Association of Childhood Education, Minority Organization for Students in Education, Mathematics Education Club, and the Student Council for Exceptional Children. **Engineering:** The American Institute of Aeronautics and Astronautics, American Institute of Chemical Engineers, American Institute of Industrial Engineers, American Society of Civil Engineers, Arnold Air Society Association for Computing Machinery, Florida Engineering Society, IEEE Computer Society, Institute of Electrical and Electronic Engineers, and the Society for the Advancement of Engineering and Science. **Fine Arts:** The Dance Club, Fine Arts Forum, North Tampa Community Performing Alliance, Sigma Alpha Iota, and the Student Theatre Productions Board.

HONOR SOCIETIES Honor societies recognize outstanding students for scholastic or service achievement. Membership in honor organizations is usually by invitation. Honor organizations are Alpha Epsilon Delta, Alpha Phi Sigma, Alumni Scholars Club, Arts and Letters Honor Society, Beta Alpha Psi, Chi Epsilon, Council of Honor Societies, Gamma Theta Upsilon, Golden Key, Kappa Delta Pi, Kappa Tau Alpha, Mortar Board, Omicron Delta Kappa, Phi Eta Sigma, Phi Kappa Phi, Phi Mu Alpha, Pi Gamma Mu, Pi Sigma Alpha, Psi Chi, and Tau Beta Pi.

COLLEGE AND RESIDENCE HALL COUNCILS College and residence hall councils represent student interests to the University and provide an organizational forum for students in each college or residence hall. The college councils are the Andros Hall Council, Argos Hall Council, Arts and Sciences Council, Business Student Advisory Board, Communication Council, Education Council, Fine Arts Advisory Board, Nursing Student Council, Public Health Student Association, Social and Behavioral Science Council, Co-op Advisory Council, Engineering College Association, and the Village Hall Council.

INTERNATIONAL AND POLITICAL/SOCIAL CHANGE International student organizations at USF include the Caribbean Cultural Exchange, Chinese Student Union, Intercultural Organization, Lebanese Student Union, Model United Nations, Muslim Student Organization, Vietnamese Student Association, and Students of India.

Organizations for political and social change are College Republicans, the Young Democrats, and the Students for Clinton.

University Police

The USF Police Department, located at the intersection of Maple and Fletcher, provides the full range of public safety services to the community twenty-four hours a day, seven days a week. All University Police Officers are commissioned Law Enforcement Officers of the State of Florida. The telephone number for on-campus emergencies (personal injuries, fires, crimes in progress) is 911. The telephone number for on-campus non-emergencies is 974-2628.

Victims' Advocacy Program

The Victims' Advocacy Program is available to assist all USF students or employees who are victims of actual or threatened violence, including, but not limited to battery, assault, sexual battery (date rape, acquaintance rape, stranger rape), and attempted sexual battery.

Services provided include: information, support, and guidance in Crisis Intervention, emergency shelter, medical help, counseling referrals, and other assistance as required. Services are available 24 hours a day, seven days a week by calling USF Victim Advocate at 974-5757.

Police reports are strongly encouraged; however, reports are not required for information and referral assistance.

Campus Recreation

The Campus Recreation Program is designed to provide opportunities for participation in a wide variety of sports and recreational activities for the entire University community through its four components.

Intramural competition is scheduled in 24 different sports, with considerable interest in participation by resident hall teams, campus organizations and independent students.

The Outdoor Recreation division offers opportunities for students to become involved in outdoor trips, lectures, and workshops, i.e., snow skiing, sailing, canoeing, camping. Students can become involved as participants, group leaders, workshop administrators, or may simply rent any of the large inventory of outdoor recreation equipment.

The sports club program offers participation opportunities for students with a special interest in twenty different sports, from aikido to weight lifting.

Recreation facilities--swimming pools, gymnasium, tennis and racquetball courts, playing fields, and the USF riverfront--are available for student and staff use during free time, as well as recreation equipment, which may be checked out at the Gym.

A yearly Campus Recreation Handbook is published which details the programs and facilities available, and a schedule for recreation hours is available each semester.

Intercollegiate Athletics

USF fields intercollegiate teams in both men's and women's sports. The University is a member of the National Collegiate Athletic Association and competes in the University Division I in men's baseball, basketball, track, cross country, golf, soccer, and tennis. The women compete in basketball, golf, tennis, softball, track, cross country, and volleyball. Schedules include competition with regionally and nationally ranked teams. USF is a member of the Metro Conference.

Student Publications

USF encourages a program of campus communication through two publications. These publications are all-University in approach and coverage. They are staffed by students under the general supervision of the Office of Student Publications.

The **Oracle**, a tabloid campus newspaper, is published Monday through Friday during the fall and spring and twice a week during the summer. Averaging 16 to 20 pages each issue, the **Oracle** provides training and professional experience for those students interested in print journalism, layout and design, and advertising space sales. The **Oracle**, winner of numerous awards, was named "Best Student Daily in the Nation" for 1990 by the Society of Professional Journalists.

Omnibus, a literary magazine, is published each semester and contains prose, poetry, photos, and graphics produced by students.

Students interested in staff positions, with either of the publications, are invited to apply.

Counseling Center for Human Development

The Counseling Center for Human Development provides professional services to USF students in career counseling, personal counseling, psychiatric consultation, and reading/study skills. The Center provides a range of services aimed at the early detection and prevention of student mental health problems and the development of skill-enhancing programs. The following direct services are offered to USF students: Intake evaluation, time-limited psychotherapy and behavior therapy, group therapy, skill-enhancing programs and workshops, anxiety management, paraprofessional programs, and referral services. Professional psychologists also assist students in career and life planning, particularly those with identity, motivational, and related personal problems. The Psychiatric Service assists students when psychiatric evaluation, medication, or hospitalization are needed. The Counseling Center Outreach Program sponsors workshops and structured groups in a variety of career and personal growth areas.

The Paraprofessional Counseling Service is sponsored by the Counseling Center and provides a peer crisis counseling service (Helpline) from 6-12 p.m. seven nights a week. This program is staffed by student volunteers and is under the supervision of Counseling Center staff, who also provide training.

Special services are provided by the State Division of Vocational Rehabilitation, which maintains an office in the Counseling Center. The Counseling Center also houses the Employee Assistance Program and the Center for Alcohol and Substance Abuse Research and Prevention.

Offices of Veterans Services

Veteran's services are provided at each of the USF campuses. Veteran advisers work closely with the staff of the Veterans Administration (VA) in St. Petersburg to provide special services to all eligible veterans, dependents, and active duty personnel. The Veterans Services staff actively encourages persons who have a desire to start, continue, or resume higher education course work to visit the Veterans Services office. Applications for veterans' benefits are completed in Veterans Services, processed through the Certifications Section of the University Registrar's Office, and sent directly to the VA.

Services are available to help solve financial problems experienced by veteran students as follows: registration and tuition fee deferment, advance payment, and part-time work opportunities through the VA Work-Study program. Developmental course work can be accomplished through cooperative efforts with local community colleges. Guidance and referral services are provided with student financial assistance, job placement, student housing, personal and family counseling, career planning, academic advising, and military service school credit.

USF is a Service members Opportunity College (SOC) and encourages active duty personnel to attend the University. For more information on degree completion and tuition assistance, in-service students should first check with their installation's education officer.

U.S.F. Institute on Black Life

The Institute on Black Life was established in 1986 with a mission to serve as a "bridge" between the University and the Tampa Bay community. The main purpose of the Institute is to serve as a vehicle to utilize faculty, staff and student expertise with identified university and community needs for research, training and program development.

Through its three major components: Research, Development and University/Community Service, the Institute seeks to enhance the economic, educational, social, political, and religious life of the University and Tampa Bay Community.

RESEARCH The Institute maintains an active and highly professional applied research program with faculty representation from various disciplines. It serves as the center for generating research and creative activity. Funds are sought through contracts, grants

and private foundations to initiate new projects and provide resources to faculty, staff and student research that is already in progress.

DEVELOPMENT The Development component provides links with the private sector to establish scholarships, fellowships, book funds and programs which will enhance the quality of life for students, especially minority students attending USF.

UNIVERSITY/COMMUNITY SERVICE The Institute sponsors University/Community enhancement programs concerned with minority issues. These programs include an annual conference, Speaker's Bureau, lectures, workshops, seminars, and cultural enrichment forums. These programs may be offered in conjunction with civic, non-profit organizations, local government agencies, and businesses/corporations.

GRADUATE ADMISSIONS & RELATED MATTERS

The Graduate School is administered by a Dean, who, assisted by an Associate Dean, coordinates the admission of graduate students, advises on the budgetary request and internal allocation of funds for the support of graduate training, and administers graduate fellowships, graduate tuition waivers and scholarships, credentials graduate faculty, and presides with the President over the conferring of degrees.

Admission to Graduate Study

Application forms for graduate study may be obtained from the Office of Admissions. The University accepts applications as early as one year in advance; therefore, prospective students are advised to apply early. Applicants whose credentials are not received by the deadline for a given program will not be considered for that semester. Some departments have earlier deadlines than those listed in the Academic Calendar. Students should check the requirements for the specific programs in which they are interested. A \$20 non-refundable application fee must accompany the application unless the student has previously paid the fee at the University and been enrolled as a degree-seeking student.

Students who seek admission to a graduate degree program as first-time or transfer graduate students shall be required to meet minimum State University System-wide requirements (see below). Programs may impose more selective requirements if they so desire. These requirements are listed in the appropriate sections in this Catalog.

In order to be considered for admission, a first-time graduate student or a student transferring from a graduate program at another university, 1.) must have a bachelor's degree or equivalent from a regionally accredited university, 2.) must take the Graduate Record Examination (GRE) or an equivalent measure approved by the Board of Regents (BOR), and 3.) must meet at least one of the following criteria:

- a. Shall have earned a graduate degree from a regionally accredited institution, or
- b. Shall have earned a "B" (3.0 on a 4.0 scale) average or better in all work attempted while registered as an upper division student working for a baccalaureate degree, or
- c. Shall have a total verbal plus quantitative GRE General Test score of 1000 or higher, or an equivalent score on an equivalent measure approved by the BOR.

Each student who seeks admission as a first-time or transfer graduate student will be required to present a score on the General Test of the GRE, or an equivalent measure approved by the BOR, taken within five years preceding application.

The GRE is given 5 times a year and the GMAT 4 times at locations in the U.S. and in most foreign countries. Candidates must register for this examination at least 4 weeks before the test date and should allow 6 weeks for the receipt of test scores. The test score must be received before the student will be considered for admission.

Applicants denied admission will be given timely notice in writing, including the reason for their rejection. Applicants denied admission who meet the minimum system-wide standards may write to the Director of Admissions within 30 days of the date of denial to request reconsideration by the department, college, and Dean of the Graduate School. The request should explain why reconsideration is warranted.

Applicants from non-regionally accredited U.S. institutions may apply for special consideration for admission on an individual basis if they score at least 1000 on the quantitative plus verbal portions of the GRE General Test, or 500 on the Graduate Management Admission Test (GMAT), and have a "B" average or better on all work attempted as an upper division student working for a baccalaureate degree.

Evaluation of applicants for the College of Business Administration (except Economics) is based on a combination of indicators, including the GMAT.

Applicants denied admission will be given timely notice in writing, including the reason(s) for denial. Applicants denied admission who meet the minimum systemwide standards may write to the Director of Admissions within 30 days of the date of denial to request reconsideration by the department, college, and Dean of the Graduate School. The request should explain why reconsideration is warranted, and the student should present evidence of potential for academic success at USF.

Students with a bachelor's degree or the equivalent who do not meet the SUS criteria and wish to enroll in courses, but not in degree programs, at the post-bachelor's level may enroll as non-degree seeking students.

If, on completion of one graduate degree, a student wishes to begin work on another advanced degree at USF, the student must reapply through the Office of Admissions.

Procedure for Applying

- 1. Applicants must submit a USF Application for Admission to Graduate Study and a \$20 non-refundable fee to the Office of Admissions, Tampa Campus, prior to the University or program application deadline, whichever is earlier.**
- 2. Two official transcripts from every institution of higher learning attended must be forwarded directly from the Issuing institution to the Office of Admissions.**
- 3. Admissions test results are required of every applicant. These must be sent directly from the testing agency to the Office of Admissions.**
 - a) All applicants, except those applying to Business Administration (see below), must submit scores from the GRE General Test taken within 5 years preceding application.**
 - b) All applicants to Business Administration, except those applying to Economics, must submit scores from the GMAT taken within 5 years preceding application. Those applying to Economics must submit scores from the GRE general test.**
- 4. Applicants whose native language is not English are required to submit scores from the Test of English as a Foreign Language (TOEFL). A minimum score of 550 is required. In addition, all students whose native language is not English and who intend to apply for a teaching assistantship must submit scores from the Test of Spoken English (TSE). Applicants are responsible for making arrangements to take the examination(s) and to have their scores sent directly from Educational Testing Service to the Office of Admissions.**
- 5. Letters of recommendation may be required by the programs. (See the individual college section for particulars.)**
- 6. All transcripts and test scores must be received in the Admissions Office by the deadline for the term and program for which the student is applying.**
- 7. A student's acceptance to graduate standing is granted for the semester and the particular program specified in the official acceptance notification. The student must validate that acceptance by enrolling for that semester. If admission has not been granted because of a late application or missing credentials, or if the student does not enroll for that specific semester, the student must request that the Office of Admissions update the application for a future semester and specify the new enrollment date. This request must be made in writing within 12 months of the initial requested entry date. If a request for change of semester is not received in the specified time, a new application and fee must be submitted. Request for change in entry date must be received no later than the program or University application deadline for the semester desired, whichever is earlier.**

International Applicants

International applicants must have earned, in an institution of higher learning, a degree equivalent to a bachelor's degree from a regionally accredited university in the United States.

The following items are required as part of the formal application and should be received by USF at least 6 months prior to the desired entry date. Submission of an application does not guarantee admission.

1. A completed USF International Student Application.
2. A non-refundable application fee of \$20, payable in U.S. dollars, submitted with the application. Applications received without the application fee will not be processed.
3. Three letters of recommendation sent directly to the program to which the student is applying, attesting academic performance and ability.
4. A certificate of financial ability showing proof of financial resources sufficient to cover tuition, fees, room and board, and other expenses for the full academic year. Travel costs must be assumed by the student. Students who have signed a statement indicating sufficient financial resources cannot expect the University to assume responsibility if their funds prove inadequate. (Information about assistantships, scholarships and other financial assistance is available from the College/Department to which the student is applying.)
5. Applicants whose native language is not English are required to submit scores from the Test of English as a Foreign Language (TOEFL). See the Procedure for Applying section, sub-section 4. above for details.
6. All applicants to graduate programs (except those applying to the College of Business Administration) must submit scores from the GRE. Graduate Applicants to the College of Business Administration (with the exception of Economics) must submit scores from the GMAT. Applicants for the program in Economics must submit scores from the GRE.

Applications and information for the required tests may be obtained from the addresses listed below:

Test of English as a Foreign Language and Test of Spoken English:

Test of English as a Foreign Language Educational Testing Service
Box 899

Princeton, NJ 08540, U.S.A.

Graduate Record Examination:

Graduate Record Examination
Educational Testing Service
Box 955

Princeton, NJ 08540, U.S.A.

Graduate Management Admission Test:

Graduate Management Admission Test
Educational Testing Service
Box 966

Princeton, NJ 08540, U.S.A.

7. International applicants must request all schools previously attended to submit directly to the Office of Admissions transcripts of all work attempted. Transcripts and all other documents in a language other than English must be accompanied by a certified English translation signed and sealed by an authorized government or school official. Applicants must submit certificates, diplomas, and transcripts showing subjects and grades from the first year of university work to the time of application. Documents submitted will not be returned to the applicant or forwarded to another institution.
8. All non-immigrant degree-seeking international students on all USF campuses, must demonstrate that they have adequate health insurance coverage for illness and injuries in the United States.

Non-Degree Seeking Students

Students who are qualified to enroll in specific graduate courses, but who do not intend to work toward a graduate degree, may enroll as non-degree seeking students. Non-degree seeking students may enter classes on a space available basis by obtaining consent of the department chairperson and must meet all prerequisites for courses in which they wish to enroll. Certain classes are available only to degree seeking majors and may not be available for non-degree seeking students. Should a student apply and be accepted to a graduate program, **no more than 12 hours of USF credit** earned as a non-degree seeking student may be applied to satisfy graduate degree requirements. Any application of such credit must be approved by the degree-granting college and must be appropriate to the program.

Those interested in enrolling as non-degree seeking students are urged to contact the Coordinator of Graduate Studies in the college offering the courses for a description

of requirements and procedures. The College of Business Administration will approve non-degree seeking student registration in graduate courses for transient students only (degree-seeking at other accredited institutions).

The Traveling Scholar Program

The SUS Traveling Scholar program enables a graduate student to take advantage of resources available on other SUS campuses. A Traveling Scholar by mutual agreement of the appropriate academic authorities in both the sponsoring and hosting institutions, receives a waiver of admission requirements and application fee at the host institution and a guarantee of acceptance of earned credits by the sponsoring institution.

A Traveling Scholar must be recommended by a graduate adviser, who will initiate a visiting arrangement with the appropriate faculty of the host institution.

After agreement by the Dean of the Graduate School at USF and the student's adviser and the faculty member at the host institution, deans at the other institution will be fully informed by the adviser and will approve or disapprove the academic arrangement.

Registration

Registration dates, information, and instructions are published each term in the Schedule of Classes. Regular registration and early drop/add for continuing degree-seeking students are conducted by telephone or in person. Appointment information for regular registration is mailed in advance to non-enrolled eligible students at their permanent addresses. Currently enrolled degree-seeking students may pick-up registration materials at the Registrar's/Records & Registration Offices or call the Touchtone Registration System the week before regular registration begins to obtain registration date/time. Continuing degree-seeking students are encouraged to register during this period to avoid lines and to allow time for schedule adjustments by the colleges. New degree-seeking students receive registration instructions for their first term from the Admissions Office.

Students may also register in person during the week before classes begin. However, no schedule adjustments (drop/adds) are permitted during this week. Students who have not registered prior to the beginning of the term may register late during the first week of classes. A \$100 late registration fee is charged degree-seeking students.

All registered students may drop or add courses during the first week of classes without penalty. Students owe fees for all courses on their records at the end of the fifth day of classes. Fees must be paid or, if mailed, postmarked by the fifth day of classes to avoid cancellation of registration.

Immunization Requirement

The SUS requires all students under the age of 40 to present acceptable proof of immunity to measles and/or rubella or to secure an approved medical or religious exemption as a condition of registration. All students born after December 31, 1956 must submit documented proof of immunity to measles. All students under the age of 40 must present documented proof of immunity to rubella. Acceptable proof of immunity must be received prior to a student's being permitted to register. Students may present the documented proof of immunization to:

USF at Tampa

Student Health Services
USF SHS 100
Tampa, FL 33620

USF at St. Petersburg

Records Office
Bayboro Hall 126
140 Seventh Avenue South
St. Petersburg, FL 33701

USF at Sarasota

Office of Student Affairs
5700 N. Tamiami Trail
Sarasota, FL 33580

USF at Fort Myers

Admissions and Records
8111 College Parkway S.W.
Fort Myers, FL 33907

USF at Lakeland

State Road 540
Lakeland, FL 33803

The required Immunization Form may also be obtained at the above locations.

Students registering only for off-campus courses in the following categories are temporarily exempt from the immunization requirement: Bachelor of Independent Studies (BIS), Open University (TV), FEEDS Program, Off Campus Term (OCT),

Cooperative Education Work Assignments and Continuing Education and special workshop courses that meet off campus.

Medical questions or questions about acceptable proof may be directed to the Student Health Services, University of South Florida, SHS 100, Tampa, FL 33620.

Financial Assistance

Financial assistance is available through the Graduate School, the College of your major, the Office of Financial Aid or external sources. It is wise to check all sources to be fully aware of the programs for which you may qualify.

Assistantships or Associateships - To be eligible to obtain a Research, Teaching or Graduate Assistantship or Associateship, a student must be degree-seeking and be enrolled each semester for the number of credit hours specified by his/her program/department. In special cases a research assistant or associate may be non-degree seeking for one semester only.

Graduate Assistantships and Associateships are awarded by the individual programs/departments of each college. Please contact the Graduate Program Director or Department Chair for more information.

FELLOWSHIPS, GRANTS and SCHOLARSHIPS - Fellowships, Grants and Scholarships are funds received by students for which no work or repayment is required. There are two major types: Internal and external.

Internal fellowships, grants or scholarships are those available only to USF students. The Graduate School administers the University Graduate Fellowship (UGF), Graduate Educational Opportunity Grant (GEOG) and the SUS Special Summer Program for African-American students.

UGF's are awarded annually, on a competitive basis, to full-time students of outstanding academic potential. Recipients receive \$7,000 for the academic year (Fall and Spring semesters) and a partial tuition waiver. Applicants must have an upper-division undergraduate GPA of 3.2 or better, graduate GPA of 3.5 for any graduate work, and 1200 or better on the combined verbal-quantitative portions of the GRE (1050 for the College of Fine Arts) or 550 on the GMAT. Applications are available in December from the individual graduate coordinators of each college or the Graduate School, FAO 126, 974-2846.

GEOG's are awarded to outstanding African-American graduate students. Recipients receive \$3,150 for both Fall and Spring semesters and a partial tuition waiver. Master's degree students are eligible for 4 semesters of support and Doctoral level 6 semesters. Awards are made yearly. Eligible students must be nominated by the chairperson or the program/department director of the student's discipline, have a minimum GPA of 3.0 in the last two years of undergraduate work and a minimum GRE of 900 or GMAT of 450. For additional information contact the Graduate School.

SUS Special Summer Program for African-American Students is intended to provide qualified African-American students an opportunity to acquaint themselves with graduate study. A stipend of \$1,300 is provided and students are required to carry a minimum of 6 credit hours during the Summer semester. Students may apply for this support or may be nominated by the Academic program. For additional information and applications, contact the Graduate School.

Individual colleges have information on other USF fellowships, grants or scholarships particular to their individual fields of study.

External fellowships, grants or scholarships are available to all graduate students. The Graduate Scholarships and Fellowships Program administered by the Graduate School helps current or prospective USF graduate students locate and apply for fellowship opportunities not generated within USF. Some of the awards identified by this program include the Fulbright, Rhodes, Woodrow Wilson, American Association of University Women, Robert Bosch Foundation, National Science Foundation, Patricia Roberts Harris Fellowships, and the Rockefeller Foundation.

Once an appropriate source of external funding is located the Graduate Scholarships and Fellowships Program will assist at each stage of the application procedure. Many graduate external awards include full tuition, a living stipend, travel, and book expenses.

Normally, campus deadlines for submission of application for foreign study

fellowships occur around the end of September, while deadlines for domestic awards vary but usually occur from October to March.

The Program maintains a current library of all announcements and applications for external domestic and foreign awards, and features a national computer search program to help students find awards. Students interested in external graduate study awards should contact the Graduate School.

ASSISTANCE THROUGH THE OFFICE OF FINANCIAL AID The Office of Financial Aid administers the College Work Study Program as well as several loan programs. In addition, there is a Scholarship Library which allows students to access information on private sources of funding through computerized databases, as well as source books.

Students interested in loans or work study should apply as soon as possible after January 1, each year for the coming academic year, which starts in August. Programs that are awarded by the Office of Financial Aid have limited funds, and are awarded on a priority basis.

Application packets are available outside the Office of Financial Aid SVC 1102. The need analysis form, included in the packet, serves as an application for work study as well as two campus-based loans. There are separate application packets for two other loans, the Stafford Loan and the Supplemental Loan for Students (SLS), programs in which an outside lender provides the funding, but USF determines the eligibility.

More comprehensive information regarding these programs, including details for applying and qualifying, can be found in the Information Bulletin found in the packet with the need analysis, and also in the separate loan packets, or by contacting the Office of Financial Aid. Counselors are available to answer questions, provide information and assist in understanding the application process.

Students whose financial aid funds are delayed in delivery may qualify for: a temporary deferment of the registration fees; or for a Financial Aid Short-term Loan (FAST Loan); available through the first week of class. Deferment cards are mailed to eligible students, but FAST Loan applications must be requested individually. FAST Loans are available for fees and/or books. Student who process a deferment contract are eligible to process a FAST Loan for books.

In addition, the Office of Student Financial Services (ADM 176) has a limited amount of funds for another short term loan which is not contingent upon delayed financial aid. These loans are for registration fees, or for emergency purposes once fees are paid. Details can be obtained by contacting that office.

TUITION WAIVERS - The Florida Legislature provides funds for graduate tuition waivers to attract outstanding students. Tuition waivers partially reduce a student's In-State and/or Out-Of-State fees. They are awarded to Research, Teaching or Graduate Assistants/Associates appointed to work at least 10 hours a week (.25 FTE). Tuition waivers are available through the student's academic department.

TAX LIABILITY - The Federal Tax Reform Act of 1986 has substantially limited the extent to which scholarships, grants, fellowships and tuition waiver scholarships may be excluded from the recipients' income. Only those amounts received by degree-seeking students, which are actually used in accordance with the conditions of the grant for course-related expenses, may be excluded from gross income, unless such amounts (including tuition reductions) represent payment for services rendered. Students who receive scholarships, grants, fellowships, or tuition waivers are responsible for record keeping, filing, and for the payment of any income tax that may be due. For more information request IRS Publication 520 at 1-800-829-3676.

Office of Scholarly Publications

The Office of Scholarly Publications fosters the publishing of works of original scholarship, research, and thought in the arts and sciences, including works of local and regional interest, through a program of subvention.

Scholarly Publications is governed by a Council consisting of distinguished members of the Graduate Faculty. The governing board solicits manuscripts and conducts a peer review of manuscripts submitted for subvention. The Council operates in part as an advisory board to the University Press of Florida.

Off-Campus Courses and Programs

Graduate courses and programs are offered at locations other than the Tampa, Fort Myers, Sarasota, St. Petersburg, and Lakeland campuses. Classes generally are scheduled once a week.

Both degree and non-degree seeking students may participate in off-campus programs. Degree-seeking students must, however, apply for admission to the University at an early date, so that courses taken may be considered for inclusion in a program of studies.

Information on course enrollment procedures for off-campus courses and programs may be obtained from the office of the Dean of the college in which the courses or programs are offered.

ACADEMIC POLICIES AND PROCEDURES, PROGRAMS AND SERVICES

The Office of the Registrar maintains the official academic records for all students and course registrations for currently enrolled students. Students should contact this office with questions concerning academic policies and procedures pertaining to their current registration or academic record. NOTE: Each student must be aware of the University's academic policies and procedures insofar as they are affected.

USF and all its colleges, departments, and programs establish certain academic requirements that must be met before a degree is granted. These requirements concern such things as curricula and courses, majors and minors, and academic residence. Advisers, directors, department chairs, and deans are available to help the student understand and arrange to meet these requirements, but the student is responsible for fulfilling them. If, at the end of a student's course of study, requirements for graduation have not been satisfied, the degree will not be granted. For this reason it is imperative that all students acquaint themselves with all regulations, remain currently informed, and be responsible for completing requirements. Courses, programs, and requirements described in the Catalog may be suspended, deleted, restricted, supplemented, or changed in any manner at any time at the sole discretion of the University and the Florida Board of Regents.

General Academic Regulations and Information

Semester System

USF operates on a semester system. Semesters begin in August and January, with summer sessions beginning in May and June.

Catalog

A student is entitled to one USF Graduate Catalog per issue. Students wanting additional copies may purchase them from the University Bookstore.

Prospective students may obtain general University information concerning admissions, fees, and degree programs by requesting the graduate brochure from the Admissions Office.

Availability of Courses

The University does not commit itself to offer all the courses, programs, and majors listed in this Catalog, unless there is sufficient demand to justify them. Some courses, for example, may be offered only in alternate semesters or years, or even less frequently if there is little demand.

Course Attendance at First Class Meeting

STATEMENT OF POLICY Students are required to attend the first class meeting of all regularly scheduled classes at the 5000 level and below, for which they have registered prior to the first day of classes, in order to ensure their enrollment. Students not in attendance at the first class meeting of these courses **may** be dropped from the course. Students who are unable to attend the first class meeting because of extenuating circumstances beyond their control must inform the college or department, preferably in writing, that they will be in attendance at subsequent meetings. For structured courses, 6000 and above, this first-day requirement will be set by the College/Campus Dean. Check individual colleges and campuses for specific information. **NOTE: To avoid fee liability and academic penalty, the student is responsible for ensuring that he/she has dropped or been dropped from all undesired courses by the end of the 5th day of classes.**

ADDS After students have completed their registrations, they may add courses until the add deadline specified in the Academic Calendar. See the appropriate semester University Class Schedule for detailed instructions and dates.

DROPS A student may drop a course(s) during the Drop/Add period (first five days of classes). No entry of the course(s) will appear on any permanent records and a full refund of fees paid by the student is due for a course(s) dropped within this period.

A student also may drop a course(s) between the second and ninth week of the semester (except for summer sessions – see University Class Schedule for dates). Registration fees must be paid for the course(s) and the academic record will reflect a "W" grade for the dropped course(s). Courses dropped after the ninth week (see Academic Calendar for deadline) will result in an automatic "F" grade.

AUDITING PRIVILEGE A student wanting to audit may do so; however, the student is not allowed to take exams, nor will any grades or credit be given. The student's status for that class is an audit and her/his presence in the classroom is as a listener.

A student must register to audit courses during the late registration period. (No audit registrations are processed during regular registration periods.) Fees for audit are the same as for credit, except that out-of-state tuition is not charged. See University Class Schedule for detailed instructions and dates.

CANCELLATION BEFORE FIRST CLASS DAY Students may cancel their registrations by notifying the Office of the Registrar in writing prior to the first day of classes. If fees already have been paid, students may request a full refund of fees from the Office of Finance & Accounting.

WITHDRAWAL Students may withdraw from the University, without academic penalty, during the first nine weeks of any term (except for summer sessions – see Class Schedule for date). They must submit a completed Withdrawal Form to the Office of the Registrar. No entry is made on the academic record for withdrawals submitted during the first week of the term. All subsequent withdrawals are posted on the academic record with a grade of "W". A grade of "F" will be assigned automatically for all course work from which a student withdraws after the end of the ninth week of the term.

Students who withdraw during the Drop/Add period (first five days of classes in each term/semester) may receive a full refund of fees paid by the student.

All refunds must be requested in writing from the Office of Finance and Accounting. No refund is allowed after this period, except for specified reasons. See "Refund of Fees" under Financial Information for complete details.

TRANSCRIPT INFORMATION Transcripts of a student's USF academic record may be requested through the Office of the Registrar. A student's academic record can be released only upon authorization by the student. Students requesting transcripts may do so in person or by writing to the Office of the Registrar. Include full name, social security number, and date of birth, and indicate names and addresses to whom transcripts are to be sent. If grades for the current term are needed, clearly indicate that the transcript request is to be held for grades. There is no charge for transcripts. Transcripts cannot be released for students who have outstanding financial obligations to the University.

Grades and Scholarship Requirements

Graduate Grading System

Academic achievement is based on the following grading system:

- A — Superior performance
- B — Average performance
- C — Below Average performance
- D,F — Failure
- I — Incomplete
- M — Missing grade/no grade reported by instructor
- N — Audit
- S — Satisfactory
- U — Unsatisfactory
- W — Drop or Withdrawal from courses without penalty
- Z — Continuing registration in Thesis/Dissertation courses

Grade Point Average

The University uses a four-point grading system to compute grade point averages (GPA) (A = 4 quality points, B = 3, C = 2, D = 1, F = 0). The GPA is computed by dividing the total number of quality points by the total number of graded (A-F) hours completed. The total quality points are figured by multiplying the number of credits assigned to each course by the quality point value of the grade given. Graduate students are not eligible for grade forgiveness. All grades earned, regardless of course level, will be posted on the transcript. If a student retakes a course, both grades will be used in the determination of the GPA.

S/U Grade System

Graduate students may not take courses in the major on an S/U basis unless courses are specifically designated S/U in the Catalog. Graduate students may take courses outside of the major on a S/U basis with the prior approval of the course professor, the major professor, and the dean of the college in which the degree is offered. The student may apply a maximum of 4 hours of such credit (excluding those courses for which S/U is designated in the Catalog) toward a master's degree.

Directed Research (master's and doctoral level) and Thesis (Master's, 6971) and Dissertation (Doctoral, 7980) courses are designated as variable credit and are graded on an Z/U basis only. Before a student begins work under Directed Research, a written agreement must be completed between the student and the professor concerned, setting forth in detail the requirements of the course.

"I" Grade Policy

An "I" grade may be awarded at the discretion of the instructor only when the student is otherwise earning a passing grade and only if the incomplete is due to the omission or fault of the student. Students are advised to initiate a written contract for incomplete grades. The contract should include a description of the work to be completed, the date by which the work is to be submitted and should be approved and signed by the course instructor. Until removed, the "I" is not computed in the grade point average. If not removed after two terms (including summer), "I" grades will be converted to "IF" (Incomplete-Fail). Students do not re-register for courses in which they are only completing previous course requirements to change an "I" grade. If a student wants to audit a course for review in order to complete course requirements, full fees must be paid. All "I" grades must be removed before graduation.

"M" Grade

In the event a grade is lost or not submitted by the instructor, the transcript will reflect a default grade of "M" (missing). This will be treated the same as an "I" grade.

"Z" Grade

The "Z" grade indicates continuing registration in thesis/dissertation courses. Upon satisfactory completion of the thesis/dissertation, the final grade assigned will be an "S".

University Graduate Policies and Procedures

GRADUATE COUNCIL The Graduate Council develops University policies and principles for graduate work. The Council also exercises the right of inquiry and review to ensure that high scholarly standards are maintained, and it is responsible for the establishment of University standards and regulations for graduate students and faculty. The Council reviews all new graduate courses, new degree programs, and modifications of existing courses and programs. The membership of the Graduate Council includes ten faculty members, two graduate students, and two ex-officio members: the Dean and the Associate Dean of the Graduate School. The Council's chairperson and vice-chairperson are elected from the faculty members.

MAJOR PROFESSOR/ADVISER Upon a mutual recommendation from the student and professor concerned, an adviser or major professor will be appointed by the program director/departmental chairperson and approved by the Dean of the Graduate School. The appointment will generally be made during the student's first term.

GRADUATE FACULTY Members of the Graduate Faculty at USF achieve that distinction by being recommended by the faculty and chairs of their respective

departments and by the credentialing committees and deans of their respective colleges. Recommendation by these individuals and groups is based on University-wide criteria often supplemented by additional criteria of the department and/or college. Final approval of appointment to the Graduate Faculty is made by the Dean of the Graduate School.

Criteria used include holding the appropriate terminal degree, active performance in research and published scholarship and/or appropriate forms of creativity, and experience and/or demonstrated interest in teaching at the graduate level and fostering and guiding the academic progress and research of graduate students.

ACADEMIC STANDARDS Graduate students must maintain an overall average of 3.0 ("B") in all courses. No grade below "C" will be accepted toward a graduate degree, but all grades will be counted in computing the overall average.

Any student who is not in good standing at the end of a semester shall be on probation. Notification of probation shall be made to the student in writing by the department, with a copy to the college dean. At the end of the probationary semester, the department shall recommend to the college dean, in writing, one of three alternatives: (1) removal of probation, (2) continued probation, (3) dismissal from degree program. Concerted effort will be made during the probationary period to aid the student in reestablishing good standing. If the student is unable to reestablish this standing, the student may be dismissed from a degree-seeking status after one semester of probation by the Dean of the Graduate School, upon recommendation by the dean of the student's college.

ENROLLMENT REQUIREMENTS FOR GRADUATE STUDENTS All degree seeking graduate students, excluding students admitted to candidacy, must be enrolled at least one term (fall, spring, summer) during the previous 12 months. Students who have not enrolled in any of the last three terms will be dropped from their degree program. Students may reapply to the University by submitting a new application. Applicants will be subject to the admission criteria in effect at that time. Students may request exceptions to this policy, for legitimate and valid reasons, through their Department, College, and the Graduate School.

UNIVERSITY REGULATIONS A student taking 9 or more hours toward the degree in a semester will be classified as full-time. The normal graduate load is 9-12 hours per semester.

A student who has completed the required course work and continues to occupy space and to receive faculty supervision, but who has not submitted a thesis/dissertation, shall register for a minimum of 2 hours of Thesis/ Dissertation per term. The exact number of hours will be determined by the individual program/department and will be predicated on the staff and facilities needed to support the student. Although minimum and maximum hours required for Thesis/Dissertation will be decided by the individual program/department, many students find it necessary to take more than the required minimum hours.

Students who have completed all requirements except the comprehensive exams or completion of "I" grades will be allowed use of University Library facilities for one semester, with written approval from the Dean of the Graduate School. During the term in which students take the comprehensive exams, they must enroll for a minimum of 2 hours of graduate credit in their disciplines. If all course work has been completed, students should enroll in Independent Study.

TRANSFER CREDIT Transfer of credit from another regionally accredited school is limited to 8 semester hours or 3 courses. All transferred credit must (1) be approved by the program or college concerned, and (2) have been completed with grades of "B" or better. These credits should be evaluated and transferred by the time of enrollment.

APPEALS Graduate students may appeal actions regarding their academic status:

1. In actions based on departmental requirements, the student may appeal first to the department through the major professor, then to the college dean or representative, and then to the Graduate Dean, if necessary.
2. In actions based on the University minimum requirements, appeal shall be made directly to the Graduate School.

Reports of actions and appeals will be maintained in the student's permanent file.

CHANGE OF GRADUATE DEGREE PROGRAM Students who wish to change from one degree program to another (at the same level) must obtain a Graduate Change of Program Application from the Office of the Registrar or the College Advising Office. The new department will consider the Change of Program request as a new application and, upon their acceptance, will seek approval by the Dean of the College and Dean of the Graduate School. The new department may elect to accept all, some, or none of the graduate courses previously taken by the student. Courses accepted from the earlier graduate program must be listed by the new program on the Graduate Change of Program Application. If no courses are listed, it is assumed that no courses are accepted from the earlier program. Students wishing to change levels (e.g. Masters to Doctoral) must reapply to the University.

CHOICE OF CATALOG In order to graduate, students must meet all of the graduation requirements specified in the USF Catalog of their choice. Students may choose any USF catalog published during their continuous enrollment. Students who have transferred from one Florida public institution to another are affected by the following Board of Regents policy:

Graduation requirements in effect at the receiving SUS institution at the time a student enrolls at a Florida public institution of higher learning shall apply to that student in the same manner that graduation requirements apply to its native students, provided the student has had continuous enrollment as defined in the SUS institution's catalog.

Continuous enrollment is defined as completing a minimum of two terms per year at USF, with grades assigned for courses taken, through time of graduation. Students who are continuously enrolled may select any Catalog within 5 years of their graduation or completion date. Students cannot choose a USF Catalog published prior to or during an academic year in which they did not complete at least two terms. Each Catalog is considered to be published during the academic year printed on the title page.

If the student cannot meet all of the graduation requirements specified in the Catalog of choice as a result of decisions and changes by the University in policy matters, course offerings, etc., appropriate substitutions will be determined by the chairperson of the department/program to ensure that the student is not penalized. University policies are subject to change and apply to all students regardless of Catalog choice.

APPLICATION FOR DEGREE Each student who plans to complete degree requirements by the end of a term must submit an Application for Degree by the deadline noted in the Academic Calendar for the term in which graduation is expected. The application form is available in the Office of the Registrar.

A student must be enrolled for a minimum of 2 thesis or dissertation hours during the semester of graduation.

COMMENCEMENT Graduate students will not participate in commencement exercises until all requirements for the degree sought have been fulfilled.

EXCLUSIONS Members or former members of the faculty who hold or have held the rank of Assistant, Associate, or Full Professor are not eligible to be granted degrees from the USF, except upon prior authorization of the Graduate School.

In cases where a member of the immediate family of a faculty member is enrolled in a graduate degree program, the faculty member may not serve on any advisory or examination committee or be involved in any determination of academic or financial status of that individual.

Graduate Degree Programs

Master's Degree

PROGRAM AND COURSE REQUIREMENTS During the first term of study, the student and major professor should plan a program of work which, when completed, will satisfy the degree requirements specified. A copy of this program, signed by the student and professor, should be maintained in the student's department file.

A minimum of 30 hours is required for a master's degree, at least 16 hours of which must be at the 6000 level. At least 20 hours must be in formal, regularly scheduled course work, 10 of which must be at the 6000 level.

Up to 6 hours of 4000-level courses may be taken as part of a planned degree program. Additional graduate credit may be earned in 4000-level courses only if specifically approved by the appropriate dean and by the Graduate School. Students enrolled in undergraduate courses as part of a planned degree program are expected to demonstrate a superior level of performance.

Graduate students may not enroll for more than 18 hours in any semester without written permission from the college dean.

MASTER'S COMMITTEE Students working toward a thesis degree will have the benefit of a committee of members of the graduate faculty, appointed by the program director and approved by the Dean of the Graduate School. The committee, consisting of the major professor and at least two other members of the department or area in which the degree is sought, will be recommended by the chairperson upon request from the student and the major professor. The director of a thesis must be a USF graduate faculty member with an advanced degree, or equivalent professional qualifications appropriate to the required level of supervision, and must be credentialed for thesis direction. Notification of the committee appointment will be sent to the Dean of the college and to the Dean of the Graduate School. The committee will approve the course of study for the student, supervise the research, and accept the thesis.

TIME LIMITATIONS The University of South Florida has definite time limits covering the following items: (Colleges or Programs may have more restrictive guidelines.)

1. Test scores for the Graduate Record Examination (GRE) and Graduate Management Admission Test (GMAT) must be within five years preceding application.
2. A student's acceptance to graduate standing is granted for the academic term and particular programs specified in the official acceptance notification. The student must validate his/her acceptance by enrolling that academic term or reapply. In the event that a student wishes to change the date of entrance, he/she must notify the Office of Admissions of his/her intentions to do so.
3. Graduate students who have not been in attendance during any of the three academic terms immediately preceding the academic term for which enrollment is sought must apply for admission through the Office of Admissions. Former students returning must apply by the deadline listed in the University of South Florida catalog. Any graduate degree-seeking student who has not been in attendance at the University for more than one calendar year must reapply to the Office of Admissions by the appropriate deadline.
4. All work applicable to the master's degree requirements must be completed within seven academic years from the time a student is admitted into the program.
5. Graduate students who receive financial support from the University, including fellowship recipients, may be eligible for tuition waivers from State of Florida funds. Students working towards the master's degree may be eligible for no more than six semesters, excluding summers. Students who finish their Master's degree in fewer than the six allowed semesters may carry over their unused waiver semesters into a Ph.D. program. Students entering a Ph.D. program as post-master's in that discipline are eligible for six semesters of waivers, excluding summers. For students entering a Ph.D. program directly from an undergraduate program or with an advanced degree not relevant to the discipline, the waiver eligibility is 12 semesters, excluding summers.
6. At the University of South Florida, continuous enrollment is defined as completing a minimum of two academic terms per year at the University, inclusive of receipt of grades for courses, through time of graduation. Graduate students who are continuously enrolled may select any University of South Florida catalog within five academic years of his/her graduation or completion date.

FINAL COMPREHENSIVE EXAMINATION Prior to clearance for the degree, candidates must perform satisfactorily on a comprehensive examination in the major area. Students must be enrolled for a minimum of 2 hours of graduate credit in the discipline during the semester when the comprehensive examination is taken.

THESIS If a thesis is required, it must conform to the guidelines in the Handbook for Graduate Theses and Dissertations available in the University Bookstore. An abstract must accompany the thesis. The thesis must be submitted to the Graduate School by

the date established for submission in the semester in which graduation is to occur. The Graduate School will not accept a thesis after the first day of the semester unless the candidate is enrolled in the proper thesis course (6971) for at least 2 hours. If the student elects to submit the final copy of the thesis by the first day of the semester, the student will not be required to register for 2 hours of thesis but must reapply for graduation. In addition, the student must have been enrolled the preceding semester for at least 2 hours of thesis. Only after the thesis has been approved for filing in the University Library can the student be certified for the degree. A binding fee will be charged the student at the time the thesis is submitted. See Academic Calendar for submission deadlines.

DUAL MASTER'S DEGREE A student may wish to pursue 2 master's degrees simultaneously. Upon approval by the Graduate Council, credit for core courses required for one degree may be applied to another degree that requires the same core courses, without repetition or alternative courses.

Ed.S. Degree and Ed.D. Degree

The Education Specialist Degree (Ed.S.) and Doctor of Education Degree (Ed.D.) are offered only by the College of Education.

Ph.D. Degree

The degree of Doctor of Philosophy is granted in recognition of high attainment in a specific field of knowledge. It is a research degree and is not conferred solely upon the earning of credit, the completion of courses, or the acquiring of a number of terms of residency. The length of residency and the requirements below are minimums; departments/programs may elect to establish more rigorous requirements. The degree will be granted after the student has shown proficiency and distinctive achievement in a specified field, has demonstrated the ability to do original, independent investigation, and has presented these findings with a high degree of literary skill in a dissertation. A minimum of 90 hours beyond the bachelor's degree is required.

DOCTORAL COMMITTEES An adviser will be appointed by the department or program for each student during the first semester of residency. The adviser will advise on any specific subjected matter deficiencies and assist in the choice of a major professor and area of research. As soon as an area of research is determined and a major professor is chosen, a Doctoral Committee will be approved for the student. The department will request approval of the Doctoral Committee from the Dean of the College and the Dean of the Graduate School. The Doctoral Committee will approve the student's course of study and plan for research, supervise the research, grade the written comprehensive qualifying examination, read and approve the dissertation, and conduct the dissertation defense. The Doctoral Committee will consist of at least five members, three of whom must come from the academic area in which the major work for the degree will be done.

TOOLS OF RESEARCH Before a student becomes eligible to take the doctoral comprehensive qualifying examination, two of the "Tools of Research," designated by the Doctoral Program, must be completed. Traditionally, foreign languages have been used as research tools to gain access to literature published in foreign languages. The "Tools of Research" requirement now is interpreted more broadly to include a wide range of skills or competencies relevant to research in the discipline not ordinarily directly a part of the program of study, such as programming languages and application packages or other skills relevant to the area of study. The "Tools of Research" requirement will be specified by individual Doctoral Programs. The Program will also determine if credit hours taken to fulfill "Tools of Research" will be credited toward the Graduate Degree.

RESIDENCY The minimum requirement will be 3 academic years of work beyond the bachelor's degree. At least one academic year of residence must be on a USF campus. An academic year's residency will be defined as a minimum of 9 hours of graduate work per term, 2 terms per calendar year. Deviations from this rule must be recommended by the student's doctoral committee and approved by the Dean of the Graduate School.

TIME LIMITATIONS See Time Limitations subsection of the Master's Degree program above. In addition, after admission to candidacy, any graduate work counted toward

the fulfillment of the requirements for the Ph.D. degree must be completed within 7 calendar years.

COMPREHENSIVE QUALIFYING EXAMINATION As soon as all required course work is completed, the student must pass a written comprehensive qualifying examination covering the subject matter in the major and related fields. This examination may be supplemented by an oral examination. If the degree is not conferred within 5 calendar years of the comprehensive examination, a second comprehensive examination must be taken. When graduate students take their comprehensive examinations, they must be enrolled for a minimum of 2 hours of graduate credit in their disciplines.

ADMISSION TO CANDIDACY Students may not be admitted to candidacy until a Doctoral Committee has been appointed, and the Committee has certified that the student has successfully completed the comprehensive qualifying examination and demonstrated the qualifications necessary to successfully complete requirements for the degree. Following the completion of the Admission to Candidacy form, the student may enroll in Dissertation credits (7980). The Admission to Candidacy form will be approved by the Dean of the college and forwarded to the Dean of the Graduate School for final approval.

MANDATORY ENROLLMENT FOR DOCTORAL STUDENTS ADMITTED TO CANDIDACY Doctoral students who have completed all degree requirements, and have been admitted to candidacy, are required to accumulate a minimum of 6 credits during each previous 12 month period (previous 3 terms (e.g. Fall, Spring, Summer) until the degree is granted. If it is necessary for a doctoral student to use USF resources (for example, personnel, faculty time, facilities, or the library), the student must be enrolled. Any exception to this policy must have the prior approval of the Department, College, and the Graduate School. Students who fail to enroll for these credits will be placed on probation by the Graduate School. To be removed from probation, the student must enroll for the deficient credits and an additional 3 credits in the very next semester. Students who do not fulfill probation requirements will be withdrawn from the doctoral program. Students wishing to reapply to the University will be subject to the admission criteria in effect at that time.

FINAL ORAL EXAMINATION After the Doctoral Committee has determined that the final draft of the dissertation is suitable for presentation, the Committee will complete a form requesting the scheduling and announcement of the dissertation defense examination. The request form, along with a draft copy of the dissertation, will be submitted via the department chairperson to the college Dean and the Dean of the Graduate School for approval. The announcement must be received in the Graduate School Office at least 2 weeks prior to the scheduled oral examination. The dissertation defense examination must be held at least 4 weeks before the last day of classes; therefore, the request for defense of the dissertation must be received in the Graduate School at least 6 weeks before last day of classes of the semester in which the degree is to be granted.

The final Ph.D. Oral Examination is the culmination of the student's graduate education and is a significant formal event. The Chair of the Examination Committee is expected to be a senior and distinguished scholar, nominated by the major professor, approved by the Dean of the Graduate School with the concurrence of the Department Chair and the Dean of the College to serve as the representative of the Graduate School. If the chair is from another institution, this individual should be credentialed in that institution and/or have the equivalent qualifications necessary to be credentialed under University of South Florida criteria. The chair will be appointed by the Dean of the College of the student's dissertation committee, or of the department or program in which the degree is sought.

DISSERTATION Students must take the appropriate number of credits for dissertation as determined by the department or program.

At least 3 weeks before the last day of classes of the semester in which the student is to receive the degree, a candidate must submit, to the Dean of the Graduate School, a completed dissertation signed by the committee. The dissertation must conform to the guidelines in the Handbook for Graduate Theses and Dissertations. An abstract also

is required. The Graduate School will not accept a dissertation after the first day of the semester, unless the candidate is enrolled in the proper dissertation course for at least 2 credit hours. Students who submit the dissertation by the first day of the semester will not be required to register for 2 hours of dissertation but must reapply for graduation. In addition, the student must have been enrolled for at least 2 hours of dissertation during the preceding semester. The dissertation must be approved by the Dean of the Graduate School prior to college certification for the degree. Two copies of the dissertation will then be deposited in the University Library. Each dissertation will be microfilmed, with the student being assessed a fee for this service. A binding fee will be charged the student at the time the dissertation is submitted.

Academic Services and Support

University Library

The present library collection consists of more than 1 million volumes and is constantly growing in order to serve the University community's need for materials for instruction and research, as well as for personal knowledge and cultural advancement. Information about the volumes in the collection can be found by searching the on-line catalog, LUIS, by author, title, or subject. The catalog also contains a record of all the volumes found in the branch campus libraries, the Medical Center library, the Florida Mental Health Institute library, and the University Media Center.

Office of Research

Research and scholarly activities are essential aspects of educational programs at the University of South Florida. Faculty members are encouraged to pursue research and scholarly activities that will allow students to participate in research and training projects. In support of these endeavors, the Office of Research and its divisions are dedicated to providing opportunities for faculty, staff, and students.

The **Division of Sponsored Research (DSR)** is the central coordinating unit for sponsored research activities on all campuses. DSR provides information about funding sources to faculty and students and serves as a consultation center for faculty who desire to submit proposals for funding. All proposals for outside support must be transmitted through DSR.

Growth in external funding at USF has been phenomenal. During the past ten years, USF faculty have received in excess of \$300 million dollars from external sources to pursue research and other activities. Through their search for new knowledge, USF faculty and students have made significant contributions to the University's instructional programs and demonstrated concern for society.

The **Division of Technology Development & Transfer** provides support to both faculty and student researchers on such matters as developing and maintaining copyrights, trademarks, and patents, evaluating technology for commercial potential, and marketing the commercialization of University research products. Through the affiliated **USF Research Foundation**, technology transfer to applications that benefit the public is made possible.

Graphicstudio is an internationally renown art workshop that promotes innovative methods in sculpting and printmaking. It is the only such program to have its art works archived at the National Gallery. The distinctive mission of Graphicstudio attracts many prominent artists, which provides unique learning opportunities for graduate students.

Division of Learning Technologies

The Division of Learning Technologies, a centralized all University service, provides media support and consultation for the improvement of instruction and serves the varied non-instructional needs of the University. The following services are available to students, faculty, and staff members.

Audio-Visual Services provide equipment, and when necessary technicians and/or equipment operators, such as projectors, TV Receivers/Monitors, video projectors, video equipment, etc., for classroom use, University events and other functions. Audio-Visual Services also provide simple and complex public address systems, recording and dubbing services, and repair of audio and video equipment.

The **Film and Video Distribution's** collection contains instructional and informational films and videotapes that are available for utilization in scheduled USF courses at no charge; rental to external agencies or non-academic internal utilization; and for preview in the Film and Video Distribution office located on the Tampa campus. Reference and research services for films and videotapes not in the USF collection are also provided.

The **Graphic Design Department** provides creative design, illustration, and finished camera-ready art for most printing requirements. Services provided cover three major areas; classroom/research support, University publications, and television/radio. Also available is computer generated imagery in the production of full color transparencies, slides and video animation.

The **ID Department** produces the University's official card for all students, faculty, and staff. The ID office is open throughout registration, the first week of class and special hours when needed. During the semester, ID's are made Monday and Wednesday from 9-12, 2-5, Tuesday from 10-12, 2-5:45, Thursday and Friday 8-12. There is no charge for the original ID, replacements are \$5.00. The Department also provides security ID badges on request.

Media Productions/ITFS complements the video production and recording needs of the university by providing an in-house classroom studio production facility. The studios are part of the University's Instructional Television Fixed Services (ITFS) network. Courses, teleconferences, and meetings can be recorded or transmitted live to any designated receive site within a 25-mile radius of the Tampa campus. Media Productions also produces multi-image slide shows and remote/studio instructional, informational and promotional video productions for faculty, staff, and student organizations. Creative services offered include script writing, photography, visual design sound-track production, and all stages leading to the final product. Creative and technical consultation is available for any audio visual communications need.

Media Supplies and Services provides comprehensive assistance in the selection, design, production, and utilization of a varied range of instructional and presentational materials and tools. Services include overhead transparencies, signs, drymounting, enlargements. AV materials, such as microphones, patch cords, and video cassettes, splicing tapes, and more are available for purchase.

The **Open University (O.U.)** delivers credit courses via a variety of media to students who because of home or work responsibilities have difficulties in attending traditional on-campus classes. OU courses are equivalent to traditional courses and have no differentiation on transcripts. Courses are disseminated via television (WUSF and WSFP TV) and on radio (WUSF and WSFP FM).

Teleconferences. The Division also provides services for the reception of satellite-transmitted, interactive programs, conferences and discussions from anywhere in the world. Complete teleconference program planning, coordination and administrative services, including marketing and promotion, registration, program materials, fiscal management, and evaluation are available. The Division functions as a clearing house and provides studio production for uplinking.

University Computing Services (UCS)

USF is the host institution for the Central Florida Regional Data Center. This facility operates as a computing utility within the SUS and provides administrative, instructional, and research computing support for the University and numerous other agencies. Charges are made at published rates on a "pay for services rendered" basis.

The UCS professional staff includes instruction and research consultants who assist qualified student and faculty working on projects. In the data systems area, services to University administrative units are delivered by project teams composed of systems coordinators, systems analysts, and programmers. The staff also consists of data entry, data control, and computer operations personnel and systems (software) technical specialists. Computing projects are established through UCS Financial Services.

Central site computing equipment located in the Student Services Building on the Tampa campus includes IBM 3090-300E mainframe with tape and disk storage subsystems, printers, and plotters. Remote batch job entry and on line terminals operate at various locations on campus. Remote access units and terminals are located at the other campuses. Terminals and other equipment are also maintained in "open

use" areas to give students, faculty, and staff access to central site processing support. These remote open use areas provides significant access, often seven days a week.

Central site computing equipment located in the Student Services Building on the Tampa campus includes an IBM 3090-300E mainframe with a vector facility supporting tape and disk storage subsystems and laser and impact printers, and plotters. Remote batch job entry and on-line terminals operate at various locations on campus. Remoter access units and terminals are also located at the St. Petersburg, Sarasota, Lakeland, and Fort Myers campuses. Terminals, microcomputers, printers, and other associated equipment are also maintained in "open use" areas to tenable students, faculty, and staff access to central site processing support. These remote open use areas may vary in their scheduled hours of operation but, generally speaking, each provides significant amounts of access, normally seven days a week.

Florida Mental Health Institute

The Florida Mental Health Institute (FMHI), located at the northwest corner of the USF Tampa campus, is a multidisciplinary research, training, and service facility. FMHI's mission is to strengthen mental health services throughout the State of Florida and serve as the SUS's primary mental health research and education facility.

The Institute's four departments, Aging and Mental Health, Child and Family Studies, Law and Mental Health, and Community Mental Health, cover a range of mental health specialties and expertise. FMHI offers training and research opportunities to undergraduate and graduate students, professionals in mental health and related areas, and the public. FMHI also provides continuing education courses, technical assistance, and consultations throughout the state.

The Institute's clinical service programs serve as demonstration and research sites, and as models for state and community agencies. They include a 20-bed residential treatment unit, partial hospitalization, day treatment, outpatient, case management, and other community-oriented services. These research-oriented programs are designed for a variety of populations including children, adolescents, persons with severe and persistent mental illness, and the elderly.

The Institute's training programs emphasize practical clinical techniques and application of theory to applied settings. Similarly, FMHI research focuses on finding the most effective, least costly, and highest quality means of delivering mental health services. FMHI works closely with local, state, and national agencies to provide a public/academic partnership to address mental health and related issues.

FMHI offers students field placements, internships, research assistant ships, and volunteer and part-time employment opportunities. Students may earn academic credit for clinical placements, internships, tutorials, or independent research performed at the Institute in conjunction with USF courses. The Institute cooperates and collaborates with other SUS units, and FMHI faculty teach undergraduate and graduate courses at the request of USF departments.

Two special educational opportunities offered by the Institute are: a 12-month supervised internship program, accredited by the American Psychological Association for Ph.D. level clinical psychology graduate students, and multicultural training program to encourage minority undergraduate and graduate students to enter the mental health fields.

FMHI's library contains a specialized mental health collection of over 9,468 volumes and is open to students, faculty, mental health professionals, and the public.

FINANCIAL INFORMATION

Florida Residency for Tuition Purposes

This notice summarizes the provisions of 240.1205 Florida Statutes, BOR rule 6C-7.05 and University Policy/Procedures.

In determining residency classification, students fall into one of two categories. They are either *independent students* (students who provide more than 50% of their own total support and expenses and are *not* eligible to be claimed on a parent's or legal guardian's federal income tax statement) or *dependent students* (students, regardless of age, who provide less than 50% of their own total support and expenses or are claimed as dependents by parent or legal guardian on federal income tax statement).

The law basically requires that a U.S. citizen/permanent resident alien/independent student or a dependent student's parent/legal guardian establish and maintain a **LEGAL** Florida residence and physical presence in Florida for at least twelve (12) months before the first day of classes of the term for which Florida status is sought.

USF is required to obtain documentation of 12 months' legal residence and physical presence before a student is reclassified as a Florida resident for tuition purposes. An enrolled student seeking reclassification from non-Florida to Florida residency is required to file the Request for Change of Residency Status form and submit supporting documents to the Registrar's Office no later than the fifth day of classes in the term for which re-classification is sought.

The following is acceptable, non-conclusive evidence of the establishment of a legal residence in Florida. At least one such document must be dated/issued at least 12 months before the first day of classes of the term for which Florida residency is sought.

1. Proof of purchase of permanent home in Florida.
2. Declaration of domicile.
3. Florida driver's license.
4. Florida voter's registration.
5. Florida vehicle registration.
6. Florida title.
7. Professional/occupational license in Florida.
8. Florida incorporation or other evidence of legal residence in Florida.
9. Full-time, non-temporary employment in Florida.
10. Absence of legal ties with another state.

NOTE: Rent receipts, leases, tax returns, school/college records are **NOT** evidence of establishing a legal Florida residence but, may provide evidence of physical presence. Students who are dependent on out-of-state parents or who come to Florida for educational purposes are generally ineligible for reclassification to Florida status.

In rare cases, the law allows some students (e.g., military, public school teachers, etc.) who do not meet the basic requirements to be classified as Florida residents for tuition purposes. For more information about exceptional categories, contact the Office of the Registrar.

Fees

The following fee schedule applies to all USF graduate students. All fees are subject to change by action of the State Legislature, without prior notice. The University will make every effort to advertise any such changes if they occur.

1. **Initial Application Fee \$20** (Each application – not refundable).
2. **Registration and Tuition Fee** Students will receive a schedule and bill at the time they register and each time they drop or add during the drop/add period. This bill must be presented when payment is made. The student is responsible for paying fees in full by the appropriate due date stated in the "Schedule of Classes".

A. Fee Structure (Approximated)

Fees are assessed by course level--not student classification:

	4000	5000/6000/7000
In-State	\$60.69	\$110.10

Out-of-State	\$219.34	\$364.12
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NOTE:

- a. Students who register only for a co-op assignment must pay for a minimum of 1 hour at the level of the co-op assignment.
 - b. **Cashier's Office, ADM 131, Hours** See registration dates and times in University Class Schedule. Remainder of Semester, M-F, 9 a.m.- 3 p.m.
 - c. **Registration fee payment should be mailed to:**
 Cashier's Office
 University of South Florida
 4202 E. Fowler Avenue
 Tampa, Florida 33620
 - d. **I.D. Card Validation** See current Class Schedule for times during regular registration, Remainder of Semester, 9 a.m.- 3 p.m.; Accounts Receivable, ADM 176, 3 p.m. - 5 p.m.; U.C. Information Desk, 5 p.m. - 9 p.m.
- B. Off Campus Courses** Same fees as stated in "A" above.
- C. Florida Public Interest Research Group Fee** The Florida Public Interest Research Group (Florida PIRG) is a non-profit, non-partisan research and advocacy organization controlled and funded by Florida's college students. Florida PIRG conducts independent, policy-oriented research monitors governmental and corporate actions affecting Florida residents, and advocates reforms that benefit the general public interest. Florida PIRG also provides students with the opportunity to combine their university education with meaningful public interest work. This fee of \$3.00 is assessed to all fee-paying students each semester on the Tampa, St. Petersburg, and New College campuses. However, any student may refuse to pay the fee by initialing the appropriate box on the registration form. Telephone registrants should follow instructions provided in the Telephone Information section of the Schedule of Classes. Any student can request a refund from the Florida PIRG Office (Andros, Room 208) by appointment during the semester.
3. **Late Registration Fee** All degree-seeking students who initiate (i.e., those who have not enrolled for any courses during early or regular registration) their registrations during the late registration period will be assessed a \$100 late registration fee.
 4. **Financial Aid Payments** Financial aid warrants are available in the Administration Building after registering during the first week of classes. Warrants must be picked up and fees paid by the end of the first week of classes.
 5. **Fee Payment** All registration fees and all courses added during the drop/add period must be paid in full by the payment deadline date specified in the current Class Schedule.
 6. **Cancellation for Non-Payment of Fees** Students not on an authorized deferred payment plan and who have not paid their registration fees in full by the published deadline will have their registrations canceled. A student will receive no credit for any courses taken during that semester. Students who are allowed to register in error may have their registration canceled. Any fees paid will be refunded or credited against any charges due the University.
 7. **Intern Certificate of Participation** Students who present Intern Certificates for payment of their registration fees will be required to pay \$4.76 per hour for all credits taken during the semester. These students may register for an unlimited number of credit hours during a given semester and will not be charged a Student Health Fee.
 8. **Staff/State Employee Waivers** USPS/Faculty employees of any state agency wishing to enroll in tuition-free courses should obtain a state waiver from their agency and complete it prior to registering. After registering during the state employee registration period, the state waiver and registration form should be brought to the Cashier's Office, ADM 131, during the first week of class. Payment for thesis, dissertation, and directed study courses cannot be waived. All hours in excess of 6 must be paid for at the regular rate.
 9. **60-Day Deferment for VA Students** Students receiving VA benefits who apply in writing no later than the specified date for the 60-day deferment of fees from the

Office of Veteran's Services have until a date listed in the University Class Schedule to pay registration fees in full.

10. **Room Rent (*)** Contracts are for two semesters. Andros per semester \$780; Argos per semester; \$780/dbl; \$1,100/single; and Village per semester \$850
 11. **Food Service (*)** Contracts are for two semesters. 10 Meal Plan per semester \$829; 20 Meal Plan per semester \$943.
- (*) rates subject to change

Refund of Fees

The following refunds, less deductions for unpaid debts to the University, are authorized. A Refund Request form must be completed and presented to the Accounts Receivable Department in the Division of Finance and Accounting to initiate the refund process. A two-week waiting period is observed for each refund in the event a check is returned.

- (a) 100% of registration fees and tuition will be refunded if notice of withdrawal from the University is approved prior to the end of drop-add period and written documentation is received from the student.
- (b) 25% of registration fees and tuition paid, less building and capital improvement fees, will be refunded if notice of withdrawal from the University is approved prior to the end of the fourth week of classes (or at an appropriate time as designated by the University for summer sessions) and written documentation is received from the student.
- (c) 100% of registration fees and tuition will be refunded when a student withdraws or drops a course due to circumstances determined by the University to be exceptional and beyond the control of the student, including but not limited to:
 - 1) Illness of a student of such severity or duration, as confirmed in writing by a physician, to preclude completion of the course(s),
 - 2) Death of the student or death in the immediate family (parent, spouse, or sibling),
 - 3) Involuntary call to active military duty,
 - 4) A situation in which the university is in error.
- (d) Students who receive financial aid and subsequently change their enrollment status which results in a refund in accordance with this subsection, may have all or a portion of their refund returned to the University's financial aid programs in accordance with the Financial Aid Policy on Refunds and Repayments.

Payment of Accounts Due the University

Charges against students for loss or breakage of University equipment or books, fines, and other charges are due immediately. Delinquent accounts may be considered sufficient cause for cancellation of registration. University regulations prohibit registration or release of transcript for any student whose account with the University is delinquent. Payments should be brought to the Cashier's Office. Payments may be mailed to Finance and Accounting, University of South Florida, Tampa, 33620.

Vehicle Regulations and Fees

Motor Vehicles Students may use properly registered motor vehicles on any University campus. Parking facilities are provided for resident and commuter students. All motor vehicles and bicycles must be registered with the campus Parking Services Department, Division of Public Safety. This applies to full-time or part-time, day or evening students. To register a vehicle, a valid staff, student, or employee identification card will be required. State vehicle registration, indicating owner of vehicle, must be shown to the clerk of the Parking Services Department on request. A booklet entitled "USF Traffic and Parking Regulations" will be issued to each student registering a motor vehicle. Registration fees for three or four-wheeled motor vehicles will be \$50 for an academic year.

Yearly fees for students registering after the first semester will be pro-rated. Students may park in remote areas for a lesser fee. All decals expire on 30 August.

Motorcycles The fee for motorcycles and mopeds is \$11 per year no matter when they are registered.

Bicycles There is no fee for registering bicycles. A booklet entitled "USF Bicycle Traffic and Parking Regulations" will be issued to each student registering a bicycle.

Handicapped All staff/students with physical disabilities which impede walking may apply to the Parking Services Department of the local campus for a numbered handicapped sticker. Persons will receive vehicle registration decals free of charge if they are wheelchair-bound, legally blind, hold a current State of Florida H.C. Parking Permit, or have military disability of 50% or greater with V.A. certificate or letter. Other disabled registrants will pay the regular fee. Wheelchair-bound registrants are entitled to an exclusively numbered H.C. parking space. Other H.C. registrants shall share spaces marked Reserved Handicapped OMNI.

Evening Students Vehicle registration requirements and fees apply.

Special Services

Veterans Administration Benefits The University of South Florida is approved for the education of veterans, service members, and certain dependents of veterans, who are eligible for benefits under public laws now in effect. All degree programs currently offered at USF are approved by the State Approving Agency.

Students who may be eligible for benefits should contact the Office of Veterans Services for information, procedures, and forms as early as possible. To initiate, change, or renew benefits at USF, a request must be submitted through that office. To be eligible for full-time VA benefits, non-degree seeking students must enroll for 12 or more hours, and degree-seeking graduate students must enroll for 9 or more hours each semester.

VA regulations require that students take only courses that are applicable to their degree programs or other approved program, that they attend classes, and that they make satisfactory progress toward their degrees. There are many other VA rules and regulations of which students should be aware, including those regarding the following: double major, double degree, major/minor programs, Cooperative Education program, dual enrollment at two institutions, non-degree seeking student enrollment, courses/programs offered off campus, graduate student enrolled in undergraduate courses, independent study courses, open circuit television courses, courses taken by audit (no benefits), and non-punitive grades ("W", "M", "U", "IU") and "I" grade (unless removed within a calendar year). It is the student's responsibility to inquire concerning all VA rules and regulations and to report any change in status that affects these benefits. Additionally, VA benefits will be terminated for students who are dismissed for academic or disciplinary reasons and can only be reinstated after counseling and approval by the VA.

Veterans with a service-connected disability requesting benefits under Chapter 31 must present a VA Authorization form for the effective period of enrollment at USF. Those students may contact the Office of Loans and Scholarships no earlier than the respective semester's regular registration date for a book slip and ID card validation.

Other VA benefits include additional amounts of compensation and pension, which may be payable to eligible veterans and widows or widowers of veterans for the enrollment of dependent children. The students, parents, or guardians are responsible for notifying the VA Regional Office (where the veteran's records are located) directly of enrollment and termination of enrollment.

STUDENT SERVICES & STUDENT AFFAIRS

The University is committed to the concept of total student development – intellectual, social, physical, and moral. The curricular, co-curricular, and extracurricular programs are designed to achieve this end and to offer USF students a wide variety of beliefs, opinions, and ideas in an atmosphere of openness and candor. The programs and activities developed and implemented by the Student Affairs staff at USF are intended to improve the quality of life at the University and to meet the University's goal of total student development. The programs are presented according to guidelines established by the Florida Board of Regents (Section 6C Florida Administrative Code).

Students who attend USF are admitted under BOR guidelines, as well as under the policies and procedures of the University. University officials, particularly the Vice President for Student Affairs and his staff, are charged with interpreting the policies of the BOR to students, their families, and others in the University community.

Division of Student Affairs

The Vice President for Student Affairs and the Student Affairs staff strive to provide a campus environment that is conducive to learning and that enhances the quality of life for students at the University. The staff also offers services to students to help them cope more effectively with the many facets of college life that can affect students' academic work: financial aids, health service, individual and/or group counseling, alcohol/drug education, career planning, procedures for redressing grievances, standards for students' conduct, due process in the event of disciplinary action, and advice or assistance in time of trouble. A variety of programs and activities are offered to provide students opportunities to become involved in campus life outside the classroom: orientation for new students, residence halls, student organizations, University Center programs and activities, student publications, intramural and recreational sports, and events of special interest.

The Office of the Vice President for Student Affairs is responsible for notifying all involved parties in the event of the death of a student.

Student Health Service

The University Student Health Service provides comprehensive health care for all health fee paying students. Student Health Services functions as a walk-in clinic and maintains a day infirmary only. It is very important to bring your current validated ID card when you come. You will be screened by a nurse. If necessary, you will then be referred to one of the staff physicians. Several specialty clinics are offered at a reduced cost, i.e., gynecology, antigen, dermatology clinics.

Other services offered are a clinical laboratory and multiple health education programs. The registration requirement for measles/rubella immunization can be administered for a fee at the Student Health Services. Located east of the University Center and north of the student Services building, the Health Center, SHS 100, the hours of operation are: Monday through Friday, 8 a.m. to 5:30 p.m. These hours may vary during breaks and holidays. Any variations will be posted.

International Student Services

The University welcomes qualified students from other countries. International exchange contributes to the enrichment of campus life, intellectual development, research, and understanding, and exposes students, faculty, and staff to different cultural and national perspectives, experiences, and ideas.

The International Student Center, located in the University Center, room 259, is the office on campus designated to provide services and programs to the international student population that assist them in adjusting to their environment in the United States and achieving their academic objectives at the University of South Florida. The staff is available to counsel students on immigration, as well as on financial, social, personal, and academic aspects of student life. The Center, in cooperation with the Intercultural Organization, regularly schedules social and cultural activities. The American Friend Program is designed to help orient international students to American family life. The

English Conversation Program offers students an opportunity to practice their English speaking and listening skills outside an academic setting.

Disabled Student Services

The University has facilities for persons with disabilities and encourages their enrollment in the University. Owing to the mild climate, relatively flat terrain, modern architecture, and recent modifications, many persons with significant disabilities have been able to function independently and successfully in the University environment.

Housing

University residence hall space is limited, but every regularly enrolled single student, graduate or undergraduate, is eligible to apply. No University housing is available for married students.

RESIDENCE HALLS Twelve halls within the Division of Housing and Food Service are clustered around two centers of community activity - the Argos and Andros complexes. Each of the complexes provides a core of services for residents, including a central communications desk, mail delivery, TV and study lounges, and complete cafeteria and snack facilities. Although both complexes provide the same basic services, they offer different options in campus living.

The three residence halls in the Argos complex represent traditional hall living in attractive double-room accommodations designed for both studying and sleeping. The 40-50 residents occupying a living unit share common bath facilities attended, Monday through Friday, by the hall's housekeeping staff. Centrally located lobby areas, laundry rooms, and snack vending machines are provided.

The Andros Complex offers suites designed to accommodate eight residents - two sharing a bedroom, four sharing a study area, and eight sharing bath facilities. Most rooms are carpeted throughout and all are furnished with a bed, desk, chair, dresser, closet, and bookshelf for each resident.

Two swimming pools, tennis, handball, racquetball, sand volleyball, and basketball courts offer leisure-time recreation.

In addition to the Argos and Andros complexes, the Village student housing complex consists of 30 buildings with 10 double occupancy efficiency apartments in each building. These facilities are reserved for students who have attained junior, senior, or graduate class standing. In addition to complete cooking and bathroom facilities, each apartment has its own outside private entrance and is furnished with a bed, desk, wardrobe, bookcases, and refrigerator. Village residents have use of a swimming pool and other outdoor recreation facilities. A small convenience store and laundromat are located within the complex.

All three complexes are further enhanced by the surrounding resident parking lots, free in-room basic cable television service, and the option of in-room telephone service.

OFF-CAMPUS HOUSING The Student Government office, located in the University Center, maintains a list of off-campus housing. Listings are accepted only from householders and landlords who do not discriminate because of race, color, or national origin. Rental arrangements may best be made before the University opens. Fall semester arrangements may be made during the summer.

FOOD SERVICE Various food service facilities are available to both resident and off-campus students. These facilities offer a variety of options to meet the general and specific needs of the USF community, including residence hall cafeterias, the University Center cafeteria, bake shop and pub, satellite snack bars throughout the campus, convenience stores, and vending facilities.

For more information contact the office of Food Services at (813) 974-3194.

University Bookstores

UNIVERSITY BOOKSTORE The USF Bookstore and Textbook Center is located on West Holly Drive, west of the water tower. The store offers a variety of merchandise for the USF Community. New and used textbooks, study guides, workbooks and some reference books are available in the Textbook Center Department. A continuous buyback program offers a source for the selling of used textbooks.

The General Book Department features additional study aids, technical and professional books, the latest in paperbacks, language and travel books. Hardback best

sellers are offered at a special discount. The latest "Books in Print" catalog is available for special book orders. Sale and gift books are provided during most of the year.

The bookstore stocks all course required supplies in all colleges and a complete supply of writing instruments, paper, binders, spiral notebooks, and folders are available. The store also offers the most recent fashions in collegiate clothing, gifts and souvenirs. Other store merchandise includes cards, calculators, novelty items, magazines, jewelry (including class rings), candy and snack items. Special student, faculty and staff discounts are available on IBM personal computers and accessories. The University Bookstore is open from 9:00A-5:55P Monday-Thursday and from 9:00A-4:55P on Friday. Hours are extended into the evening at the beginning of each term. Visa and MasterCard are accepted. Ample parking is available adjacent to the store. Phone 974-2631.

MEDICAL BOOKSTORE The Medical Bookstore (MDC 102) stocks all required textbooks and a full line of medical reference and technical books. Special order service is available for any book not in stock. The store also stocks a section of the most recently published medical books. Other supply merchandise, medical instruments and a variety of gift, card and novelty items are also available. The Medical Bookstore is open from 8:00A-4:55P Monday-Friday. Visa and MasterCard are accepted. Phone 974-2095.

ST. PETERSBURG CAMPUS BOOKSTORE The Campus Bookstore, located in Coquina Hall, offers textbooks, supplies, general books, cards, novelty, gift items and imprinted clothing merchandise for the St. Petersburg students, faculty and staff. The Bookstore is open from 9:00A-5:55P Monday-Thursday and 9:00A-4:55P on Friday.

LAKELAND CAMPUS BOOKSTORE At the beginning of each term, the mobile bookstore is located in the parking lot adjacent to the academic buildings. This store offers textbooks and supplies for students on this campus.

Student Government

All regularly enrolled students are voting members of the Student Government of USF. They elect Student Government officers and student representatives to the S.G. Senate and college councils. Student Government is an agency representing student interests in programs, plans, policies, and procedure of the University, and in securing student representation to University governance. The Student Government office oversees the Activity and Service Fee Fund, offers free legal referral assistance by a staff or attorneys, and aids students with off-campus housing. To receive an off-campus housing list, mail a self-addressed, stamped envelope to the Student Government office. Other areas, such as academic grievances, minority problems, health and accident insurance, refrigerator rental, and programming productions, also are managed in the Student Government office.

Clubs and Other Organizations

Professional staff members are available to assist individuals forming new organizations and to advise currently registered groups. For complete lists and current information regarding all student organizations, please contact the Office of Student Organizations and Leadership Development, Room 240, University Center.

DANCE, MUSIC, AND DRAMA CLUBS The excellent programs in the College of Fine Arts offer many opportunities for student involvement. Theatre Department productions are open to all qualified student actors and backstage personnel. The Music Department welcomes student participation in its instrumental and choral organizations. Dance productions also are open to all qualified students. Contact the office of Dance, Theatre, or Music, for information.

Cultural Events

Each year a variety of outstanding visual and performing artists visit the USF campus. The Artist Series provides unusual opportunities for enjoying the finest professional talents in dance, music, and theatre. A quality Exhibitions Program brings varied and significant works of art annually to the University's three galleries. The College of Fine Arts arranges a full schedule of concerts, plays, lectures, films, and workshops featuring students, faculty, and visiting artists. These and other programs conducted by the College contribute significantly to the general vitality of the campus.

Most events are open to the general public and are presented both during the day and in the evening. Special ticket privileges are available to USF students. For more information, contact the Department of Fine Arts Management and Events.

Student Rights and Responsibilities

Just as the University maintains high standards of academic performance, the members of the University community support high standards of individual conduct and human relations. Responsibility for one's own conduct and respect for the rights of others are essential conditions for academic and personal freedom within the University.

Self-discipline and sensitivity to the rights of others are the principal elements of University discipline. USF reserves the right to deny admission or refuse enrollment to students whose actions are contrary to the purposes of the University or impair the welfare or freedom of other members of the University community.

Disciplinary procedures are followed when a student fails to exercise responsibility in an acceptable manner or commits an offense as outlined in the Student Conduct Code. These are described in detail in the Student Handbook.

Standards and Discipline

Any action or the aiding, abetting, or inciting of any action which is in violation of the University's Student Conduct Code and/or University Policy constitutes an offense for which students may be subject up to and including suspension. Students are responsible for compliance with all public laws as well as University Rules and Regulations. Students should also familiarize themselves with the University's Administrative Policies as defined in the Student Handbook. These include: the Equal Opportunity Policy; the Policy on Sexual Harassment; the policy on Sexual Assault and Battery; the Alcohol Beverage Policy; and the Policy on Hazing.

Any act that will constitute a violation of public laws at the University will establish cause for additional legal action.

Due Process Rights

University disciplinary procedures afford students all rights of due process required for disciplinary matters. These include: being informed in writing of the formal charges; being given three working days to respond to the charges; having the choice of asking for an informal hearing; being provided a copy of the hearing procedures; being permitted to present evidence; and being given the opportunity to cross-examine any witness.

Academic Dishonesty and Disruption of Academic Process

Students attending USF are awarded degrees in recognition of successful completion of course work in their chosen fields of study. Each individual is expected to earn his or her degree on the basis of personal effort. Consequently, any form of cheating on examinations or plagiarism on assigned papers constitutes unacceptable deceit and dishonesty. Disruption of the classroom or teaching environment is also unacceptable. This cannot be tolerated in the University community and will be punishable, according to the seriousness of the offense, in conformity with established rules and procedures.

PLAGIARISM is defined as "literary theft" and consists of the unattributed quotation of the exact words of a published text, or the unattributed borrowing of original ideas by paraphrase from a published text. On written papers for which the student employs information gathered from books, articles, or oral sources, each direct quotation, as well as ideas and facts that are not generally known to the public at large, or the form, structure, style of a secondary source must be attributed to its author by means of the appropriate citation procedure. Only widely known facts and thoughts and observations original to the student do not require citations. Citations may be made in footnotes or within the body of the text. Plagiarism, also, consists of passing off as one's own, segments or the total of another person's work.

CHEATING is defined as follows: (1) the unauthorized granting or receiving of aid during the prescribed period of a course graded exercise: students may not consult written materials such as notes or books, may not look at the paper of another student, nor consult orally with any other student taking the same test; (2) asking another person to take an examination in his or her place; (3) taking an examination for or in place of another student; (4) stealing visual concepts, such as drawings, sketches,

diagrams, musical programs and scores, graphs, maps, etc., and presenting them as one's own (e.g., drawings, sketches, diagrams, musical programs and scores, graphs, maps, etc.); (5) stealing, borrowing, buying, or disseminating tests, answer keys, or other examination material except as officially authorized, research papers, creative papers, speeches, etc.; (6) stealing or copying of computer programs and presenting them as one's own. Such stealing includes the use of another student's program, as obtained from the magnetic media, or interactive terminals or from cards, print-out paper, etc.

Punishments Guidelines for Academic Dishonesty: Punishments for Academic Dishonesty will depend on the seriousness of the offense and may include receipt of an "F" or "O" grade on the subject paper, lab report, etc., an "F" in the course, suspension or expulsion from the University.

The University drop policies and forgiveness policy shall be suspended for a student accused of plagiarism or cheating or both.

DISRUPTION OF ACADEMIC PROCESS is defined as the act or words of a student or students in a classroom or teaching environment which in the reasonable estimation of a faculty member: (1) Direct attention from the academic matters at hand, such as noisy distractions; persistent, disrespectful or abusive interruptions of lecture, exam or academic discussions or; (2) Present a danger to the health, safety, or well being of the faculty member or students.

Punishment Guidelines for Disruption of Academic Process: Punishment for disruption of academic process will depend on the seriousness of the disruption and will range from a private verbal reprimand to dismissal from class with a final grade of "W", if the student is passing the course, as shown on the student record. If the student is not passing a grade of "F" will be shown on the student record.

PROCEDURE

- (1) Alleged violations of academic dishonesty or alleged disruptions of academic process will be handled initially by the instructor, who will discuss the incident with the student. It must be noted that the Faculty Senate considers the traditional relationship between student and faculty member as the primary means of settling disputes that may arise. If the instructor observes alleged dishonesty occurring during an examination, he/she should, with discretion, notify the student of the fact before the student leaves the examination. In all cases, the instructor must attempt to schedule a meeting with the student to discuss the alleged dishonesty or disruptions.
- (2) After the discussion, if the student and instructor have reached a mutual agreement as to the solution, the instructor shall file a statement with the chairperson of the department responsible for the course outlining the facts of the incident and the agreed-upon solution signed by both the instructor and the student. If no solution is reached, the matter should be referred to the Chairperson of the department for attempt at resolution. If no resolution is reached, the matter should be referred to the Dean of the College for attempt at resolution. If no solution is reached, the dean shall appoint a student/faculty committee consisting of an equal number of students and faculty to hear the two sides of the incident and to advise the dean regarding the disposition of the case.
- (3) Academic Committee Pre-hearing Procedure. Within a reasonable time following the failure of the student/instructor/dean meetings to bring about a solution, and in no event later than three (3) months after such failure, the dean shall cause formal charges to be filed with the appointed academic committee. The charged student shall be provided with a written notice of charges, in sufficient detail to prepare for the hearing, no less than three (3) days before the hearing, except in cases of emergency as specified below.
- (4) Hearings.
 - (a) Emergency Hearings. An expedited hearing may be held before an academic administrator appointed by the dean or by the appointed academic committee in cases which involve the safety, health or welfare of any student or staff member.
 - (b) Non-Emergency Hearings before the Academic Committee -- General Principles.

- 1) The burden of proof shall be on the complainant. The standard of proof for decision shall be "substantial evidence," that is, whether it is reasonable to conclude from the evidence submitted that the student did commit the violations for which he/she has been charged and shall not be the strict criminal law standard of proof beyond a reasonable doubt.
 - 2) The proceedings of all hearings shall be recorded.
 - 3) The student may inspect the evidence which will be presented against him/her.
 - 4) The student may present evidence on his/her own behalf.
 - 5) The student may hear and question adverse witnesses.
 - 6) The student will not be forced to present testimony that would be self-incriminating.
 - 7) The student may have an adviser of his choice present, however, the role of such a person is as an adviser to the student only. The adviser may speak to and consult with the student, but may not serve as the student's advocate, question witnesses or otherwise participate in the proceedings.
 - 8) The decision of the academic committee or appointed academic administrator shall be based solely on the evidence presented at the hearing.
 - 9) The decision of the academic committee or appointed academic administrator, including findings of fact and a determination of penalty or sanction if any, shall be presented to the student in writing within a reasonable period of time following the hearing.
 - 10) The student's enrollment status will remain unchanged pending final decision, except in cases of emergency, as described above. If the issue remains open at the end of the semester, the instructor shall give the student an "I" grade in the course until all issues are resolved.
 - 11) All hearings shall be closed unless specifically requested otherwise in writing by the charged student prior to the hearing.
5. Failure to Appear: If a student against whom charges have been made fails to appear, the academic committee or academic administrator may proceed in his/her absence.
6. Hearing on Appeal: The charged student may appeal the decision of the academic committee or appointed academic administrator within thirty (30) working days of decision to the Dean of the Graduate School. The record of the initial hearing may be considered on appeal and the student is entitled access to the record when appealing. The decision of the Dean of the Graduate School is final.

Limited Access to Student Records and Release of Student Information

Student records in University custody are generally held confidential and are released only to those persons and under those circumstances authorized by law. Pursuant to the provisions of the Family Educational Rights and Privacy Act ("FERPA"; 20 USC Par. 1232g), 34 CFR par. 99.1 et seq, Florida Statutes Sub. Par. 228.093 and 240.237 and USF Rule 6C4-2.0021, Florida Administrative Code, students have the rights to:

1. Inspect and review their education records
2. Privacy in their education records
3. Challenge the accuracy of their education records
4. Report violations of FERPA to the FERPA Office, Department of Education, 400 Madison Avenue, SW, Washington, D.C. 20202 and/or bring actions in Florida Circuit Court for violations of Rule 6C4-2.001, Florida Administrative Code

Copies of the University's student records policy, USF Rule 6C4-2.0021, may be obtained from:

University Registrar
SVC 1034
4202 Fowler Avenue
Tampa, Florida 33620

or

USF Agency Clerk
Office of the General Counsel
ADM 254
4202 Fowler Avenue
Tampa, Florida 33620

Pursuant to requirements of the Family Educational Rights and Privacy Act (FERPA), the following types of information, designated by law as "directory information", may be released via the official media of the University of South Florida (according to USF policy): Student name, local and permanent addresses, telephone listings, major field of study, participation in officially recognized activities and sports, weight and height of members of athletic teams, dates of attendance, full/part-time status, degrees and awards received, the most recent previous educational agency or institution attended, and other similar information.

The University Directory, published annually, contains the following information: Student name, local and permanent address, telephone number, classification, and major field of study. The Directory and other listings of "directory information" are circulated in the course of University business and, thus, are accessible to members of the public, as well as to other students and members of the faculty and staff.

Students must inform the USF Registrar's Office in writing (on forms available for that purpose), if they wish Directory information to be withheld. The Refusal Notification must be received no later than the end of the second week of classes in the Fall Semester to avoid inclusion of student information in the University Directory. Such requests will be effective until the student has not been enrolled at USF for three (3) consecutive terms.

ARCHITECTURE PROGRAM

Master of Architecture Program

The Master of Architecture Program at the University of South Florida in Tampa is offered in affiliation with the School of Architecture of the Florida Agricultural and Mechanical University.

The Program is intended for students who hold baccalaureate degrees in fields other than architecture, though students with prior course work in architecture may be admitted with advanced standing. All students pursue the professional degree, **Master of Architecture** (M. Arch.). This degree, coupled with appropriate work experience, qualifies a graduate for licensure as a professional architect. The Program is accredited by the National Architectural Accrediting Board (NAAB).

In recognition of the Program's location in one of the state's large metropolitan areas and the unique opportunity this presents for studying architecture in an urban setting, the curriculum emphasizes urban architecture and related topics in the professional coursework, as well as elective course opportunities that focus on urban issues. It is expected that this curricular emphasis will also be reflected in the topics chosen by students for their Master's theses.

The professional content of the coursework concentrates in areas such as architectural design, graphics, history of architecture, structures, environmental technology, materials and methods of construction, theory of architecture, methods of design, professional practice, and architectural computer applications. It is assumed that students entering the program will have already taken prerequisite courses such as calculus and physics. Students lacking these must add appropriate courses to the curriculum requirements upon admission to the Program.

The M.Arch. degree requires 112 credit hours of coursework, including a thesis or Master's project. The typical course load per semester is approximately 14 credits. Students who intend to work part-time may wish to take fewer credits per term. Students who have backgrounds in architecture or related disciplines will have their transcripts evaluated for content, and course waivers may be provided. Each student, regardless of the number of courses waived in this manner, must complete a minimum of 76 hours in the program (this residency requirement may be varied by action of the faculty) to be eligible for graduation. The program is concluded with a thesis that provides the opportunity to undertake a study of personal interest. The thesis calls for in-depth application of earlier course material, and demonstrates professional competence.

Application to the Program Applicants must meet the graduate entry requirements of the State University System. SEE PAGES 13-16.

Special requirements

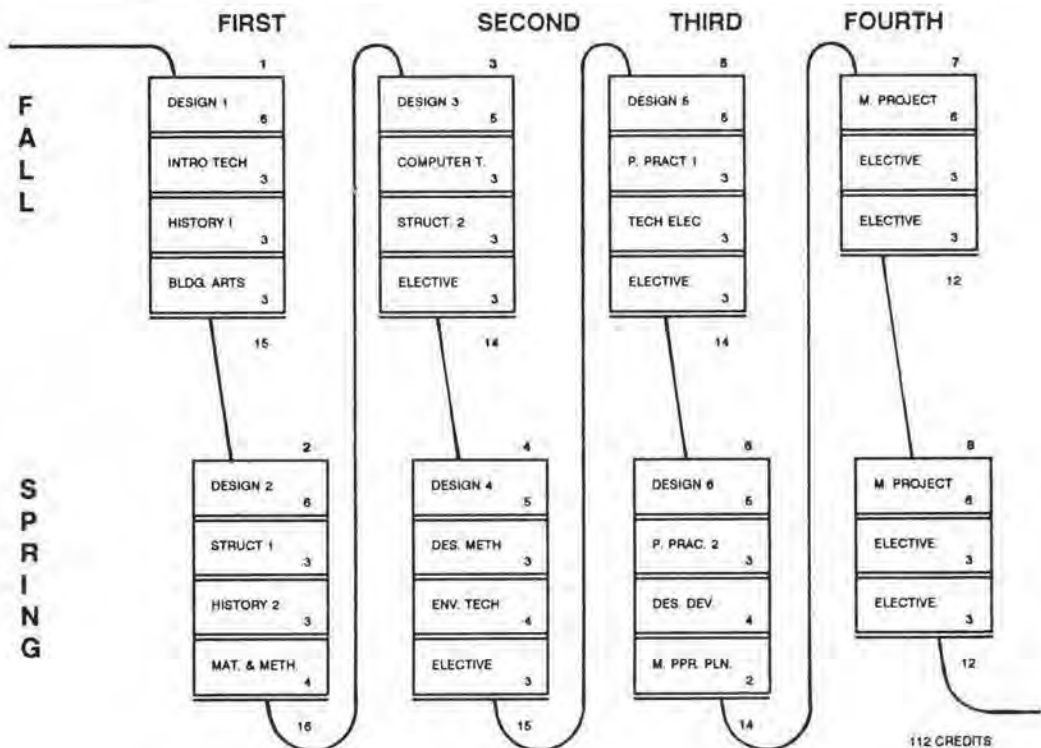
1. Submit the following to the Admissions Committee, Architecture Program, USF, 4202 Fowler Ave., USF P.O. Box 3183, Tampa, FL 33620:
 - a) Three letters of recommendation from former instructors, employers, or others in a position to assess applicant's work and academic potential.
 - b) A letter of application and statement of intent regarding the applicant's educational and career objectives and choice of program.
 - c) For applicants with prior training in Architecture or related areas: samples of student work (portfolio).
 - d) For applicants without prior architectural training: samples of work demonstrating creative and artistic abilities and problem-solving skills.

All candidates must have an interview with a faculty member responsible for admission. For more program information, interested students can contact the Architecture Program at (813) 974-4031.

Deadline to apply for the program is the same as the prevailing University graduate application deadline. Contact the USF Office of Admissions for specific information.

Prerequisites

CALCULUS
PHYSICS
INTRO TO COMPUTERS



Note: All students are required to take at least one graphics elective and one advanced technology elective.

COLLEGE OF ARTS AND SCIENCES

The College of Arts and Sciences is the result of a merger involving the former colleges of Arts and Letters, Natural Sciences, and Social and Behavioral Sciences; it is USF's newest academic unit. Master's degrees are offered in thirty-six different disciplines; the Ph.D. degree is offered in nine disciplines. Within the arts and letters, humanistic subjects are studied not merely for their utility, but also for their intrinsic merit and for what they tell us about what is permanently and universally significant to humanity. Students of the natural sciences are trained in the tools of logical analysis and the modes of experimentation in the continuing attempt to better understand the nature of the physical and biological universe. Graduate education in the social and behavioral sciences is concerned primarily with human beings, their history, individual behavior, political institutions, and their problems. Graduate programs include the traditional disciplines as well as several which feature training in the application of social and behavioral sciences theory, data, and methods to contemporary human problems. In all its functions the College of Arts and Sciences is dedicated to fostering a spirit of inquiry and intellectual growth.

Graduate Degree Programs

Master's Degree Programs

Master of Arts

American Studies
Applied Linguistics
Communication
French
History
Linguistics
Philosophy
Rehabilitation Counseling
Spanish

Anthropology
Chemistry
Criminology
Geography
Liberal Arts
Mass Communications
Political Science
Religious Studies
Rehabilitation Counseling - 5 Year Program

Applied Anthropology
Classics (Coop, U.F.)
English
Gerontology
Library and Information Science
Mathematics
Psychology
Sociology

Master of Science

Audiology
Chemistry
Microbiology
Zoology

Aural Rehabilitation
Geology
Physics

Botany
Marine Science
Speech-Language Pathology

Master of Liberal Arts

Master of Public Administration

Master of Social Work

M.A. Degree Program for Secondary School Teachers

The College of Arts and Sciences, in cooperation with the College of Education, offers the M.A. degree in English, Foreign Languages, Mathematics, Science, Social Science, and School Psychology. Because requirements apply in both colleges, the student will have an adviser in each college. The planned courses must be approved by both advisers.

For requirements the student should consult the College of Education portion of this Catalog.

M.A. Degree Program for Junior College Teachers

The M.A. degree for Junior College Teachers is available with specializations in:

Biology	Chemistry	English	French	Geography
Geology	History	Mathematics	Physics	Political Science
Sociology	Spanish	Speech Communication		

The student should consult the College of Education portion of this Catalog for more information.

Doctor of Philosophy

The Doctor of Philosophy degree is offered in the following:

Applied Anthropology	Biology	Chemistry
Communication	English	Marine Science
Mathematics	Philosophy	Psychology

Admission Requirements SEE PAGES 13-16 for general requirements.

Financial Aid For further information regarding admission and the availability of fellowships and assistantships, a candidate should write to the appropriate departmental chairperson, College of Arts and Sciences, University of South Florida, Tampa, Florida 33620.

Thesis/Dissertation Enrollment Upon successful completion of all graduate degree requirements except for thesis or dissertation, Arts and Sciences graduate students must enroll in a minimum of 2 credit hours of Thesis/Dissertation each semester (except Summers) until the completion of the master's or doctoral degree.

Program Descriptions

American Studies (AMS)

Admission Requirements SEE PAGES 13-16.

Special requirements

1. Demonstrate a satisfactory knowledge of United States culture and ideas, history, literature, and social institutions. Students may be required to take extra undergraduate courses before admission.
2. Students must interview with a departmental adviser.
3. Students must submit three letters of reference to the Graduate Director, American Studies Department.

Requirements for the M.A. Degree

Total required hours (33)

1. 9 hours: AMS 6254, AMS 6805, AMS 6938.
2. 18 hours: To be selected from 5000 or 6000 level courses in American Studies and/or related departments, such as: English, History, Humanities, Philosophy, Religious Studies, Sociology, and Women's Studies. No more than 6 hours from any one department may be credited toward the degree without written consent from the Graduate Director. Work in AMS 6375, AMS 6901, AMS 6915, AMS 6934, and AMS 6940 may be included.
3. 6 hours: Thesis 6971.

Other Requirements During the semester immediately following completion of required course work, each student should take a written examination on three areas of concentration, selected after consultation with the Graduate Director so that they will be relevant to the student's thesis.

The thesis is an extended research project within a specific area of specialization, culminating in a written academic analysis. Upon completion of the thesis, the subject of which must be determined in consultation with the Graduate Director, the student must schedule an oral defense.

Anthropology (ANT)

The M.A. program, initiated in 1974, was the first in the country to focus on career training for the practice of Applied Anthropology. Core seminars in each of the four major branches of Anthropology are required of all students, followed by specialty courses in applied anthropology. Each student performs a full-time internship for one

semester, during which they work on a problem mutually defined and negotiated by the student, a faculty adviser, and a professional supervisor from the agency in which the internship is conducted. By 1992, 146 graduates had been specifically trained for nonacademic employment in government and private-sector agencies and organizations. Graduates are employed in administration, program evaluation, planning, and research. Deadlines for receipt of M.A. application materials are March 15, for admission in Summer (May) or Fall (August) and October 15, for admission in Spring (January).

The Ph.D. in Applied Anthropology is the first such program in the country. Its primary goal is to train students for nonacademic employment in such applications as health practice and services delivery; community, regional and international development; urban planning, design and services delivery. The program also trains those interested in teaching Applied Anthropology. The Ph.D. program, while independent, complements the M.A. program. The deadline for receipt of all doctoral application materials is March 1.

The Center for Applied Anthropology fosters applied research and action projects. The center is concerned with applying anthropological knowledge, theory, method, and perspective to problems of contemporary society. Illustrative areas of activity include human service needs assessment, program planning and evaluation, social and environmental impact assessment, and public policy analysis.

Special Admissions Requirements for the M.A. in Applied Anthropology (APA)

1. B.A. in Anthropology, or related discipline, plus general University requirements for admission to graduate study.
2. If B.A. is not in Anthropology, applicants must demonstrate they have taken and passed undergraduate Anthropology courses in the four subfields of Anthropology (Cultural, Physical, Archaeology, Linguistics), or they must satisfy these deficiencies prior to enrollment in masters level courses.

Requirements for the M.A. in Applied Anthropology

1. Total required hours (40)
2. Comprehensive exams at completion of first year, or equivalent.
3. Core requirements:
 - a. Four core courses (ANT 6186; 6490; 6588; 6676)
 - b. Four graduate level seminars in Anthropology
 - c. One graduate level statistics course
 - d. One graduate level course outside the Anthropology Department.
4. Internship, one semester full time, after completion of exams and course requirements, 4 credit hours minimum.
5. Thesis (6 credit hours), at least 2 credit hours per semester, until thesis is accepted.

Special Admissions Requirements for the Ph.D. Program in Applied Anthropology

1. M.A. in Anthropology, or related discipline, plus general University requirements for admission to graduate study.
2. If M.A. is not in Anthropology, applicants must demonstrate they have taken and passed undergraduate Anthropology courses in the four subfields of Anthropology (Cultural, Physical, Archaeology, Linguistics), or they must satisfy these deficiencies prior to enrollment in doctoral level courses.

Requirements for the Ph.D. Degree in Applied Anthropology

1. Total required hours: 60 hours beyond the M.A.
2. Course requirements:
 - a. Eight structured courses within the Department of Anthropology (ANT 6706; 6766; 7703; 7704; 7760; [when the topic is quantitative methods]; 7933; 7934; 7936).
 - b. Three elective graduate level Anthropology courses.
3. Tools of research
 - a. Advanced quantitative methods (ANT 7760).

- b. Two additional skills area; e.g., foreign languages, computer analysis, qualitative research methods.
4. External specialization; minimum of three graduate level courses taken outside the Department of Anthropology, with consent of advisor; students with M.A. degrees in disciplines other than Anthropology may, at the discretion of the Advisor and supervisory Committee, substitute the M.A. for the external specialization.
5. Qualifying examination, two-part written exam covering
 - a. area of specialization within Applied Anthropology;
 - b. external specialization.
6. Two-semester internship or dissertation research; (ANT 7945, minimum of 6 credit hours).
7. Dissertation, based on research or internship; (ANT 7980, minimum of 12 credit hours).

Biology (BIO/BOT/MIC/ZOO)

Program Description Master's degrees are offered in Botany, Microbiology, and Zoology. The Ph.D. is offered in Biology. Areas of specialization in any of these degrees include: Marine Biology; Ecology (Tropical, Populational, Community, Behavioral, Physiological, and Chemical); Cell and Molecular Biology; Genetics; Physiology (Microbial, Plant, Animal); Neurobiology; and Systematics.

Special Admission Requirements for the M. S. and Ph. D. Programs. Application must be completed by February 15 by applicants who wish to be considered for assistantships. All other applications must be completed by the twelfth week of the semester preceding the one for which application is made. Applicants to the master's program must have a combined (Verbal and Quantitative) GRE score of at least 1000. Applicants to the Ph.D. program must have a combined score of at least 1100. Doctoral applicants applying in ecological disciplines are encouraged to take the advanced biology portion of the GRE. Non-native English speaking graduate students must score at least 570 on the TOEFL for admission purposes and at least 250 on the TSE to be eligible for a teaching assistantship.

Enrollment Requirements. Students in a graduate program must be either active or on a leave of absence granted by the college. Students on active status must register for a minimum of 2 hours of graduate level course work each semester. The student is responsible for meeting all requirements of the degree program.

General Graduate Requirements. A departmental committee is appointed to supervise and guide the program of the candidate. The general University requirements for graduate work must be satisfied.

Once a major professor has been assigned and/or a student occupies or utilizes significant space or facilities for research or analogous scholarly activity directly pertinent to the generation of a thesis or dissertation, the student shall enroll for no fewer than 2 hours of research credit each semester [other than summer semester], until he is eligible to enroll in thesis or dissertation credits. No student shall be required for the purposes of this rule to enroll for more than 9 hours total per semester.

A student must be registered for an appropriate load (in no case fewer than 2 hours) in the college for the semester in which all degree requirements are satisfactorily completed.

A student whose cumulative GPA falls below 3.0 will be placed on probation and must meet the college probation requirements to be reinstated in good standing. A student who receives three grades below "B" in structured courses required by the advisory committee will be dropped from the program.

Registration in Research, Thesis and/or Dissertation Courses Registration in courses entitled Directed Research, Thesis: Master's, or Dissertation: Doctoral must be with the approval of the major professor and must be commensurate with each student's research plan. Students may not register in either Thesis: Master's or Dissertation: Doctoral until a Supervisory Committee has been formed. A student who enrolls in courses entitled Thesis: Master's but does not submit a thesis or who enrolls

in Dissertation: Doctoral but does not submit a dissertation will not be certified for graduation.

Requirements for Completion of the M. S. Degree. The M.S. degree requires completion of structured coursework, a research thesis or a review paper, and passing a comprehensive examination.

The departmental graduate coordinator functions as the student's adviser until the student makes arrangements for a faculty member to serve as major adviser. The selection of a major adviser includes acceptance of the student by the faculty member. The major adviser and at least two additional faculty constitute the student's supervisory committee, which must be established within two semesters after matriculation. Failure to do so will be cause for dismissal. The supervisory committee must be approved by the departmental chairman and the college dean and the Dean of the Graduate School. The major advisor and at least one of the committee members must be from the Biology Department.

For students enrolled in the thesis program, a minimum of 30 credit hours is required at the 5000-6000 level; 16 hours must be at the 6000 level; 20 of the 30 credit hours must be in formally structured courses, 15 hours of which must be in Biology; 10 of the 20 structured hours must be at the 6000 level. All students in the thesis program must complete the graduate seminar (BSC 6935). A maximum of 10 hours of combined thesis research and seminar may apply toward the degree. Six hours of graduate work done at another institution may be transferred to the master's program, with approval of the supervisory committee. Twelve hours of graduate work completed while a non-degree seeking student at this institution may be transferred to the master's program, with approval of the supervisory committee.

For students enrolled in the non-thesis program, a 30-hour minimum is required at the 5000-6000 level; 26 hours must be in formally structured courses, 16 hours must be at the 6000 level; 15 structured hours must be in Biology. A review paper of a topic approved by the supervisory committee is required.

A final comprehensive examination is required for all students. This examination is open to all departmental faculty and normally is taken after the completion of formal course work, at least one semester before thesis presentation.

Any graduate work counted toward the requirements for the M.S. degree must be completed within 5 years after matriculation.

Requirements for the Ph. D. Degree. The departmental graduate director functions as the student's adviser until the student makes arrangements for a faculty member to serve as major adviser. The selection of a major adviser includes acceptance of the student by the faculty member and must be done within two semesters after matriculation. Applicants are strongly urged to contact faculty conducting research in the student's area of interest. The major adviser and at least four additional faculty constitute the student's supervisory committee. Three members must be from the Department of Biology, including the Advisor. The supervisory committee must be approved by the departmental chairman, the college dean, and the Dean of the Graduate School.

Twenty credit hours are required in structured graduate-level courses. Additional courses may be required, depending upon the needs of the student's program as determined by the supervisory committee. Individuals who receive the M.S. degree from the Department of Biology at USF may waive 10 credits, with the approval of the supervisory committee. Six hours of graduate work done in a master's program at another institution may be waived from the doctoral program, with approval of the supervisory committee. Twelve hours of graduate work completed while a non-degree seeking student at this institution may be transferred to the doctoral program, with approval of the supervisory committee. A total of 90 credits beyond the baccalaureate must be earned; this includes any graduate credit earned prior to admission to the doctoral program.

Doctoral students must show a proficiency in two tools of research (languages, computer programming or other tools acceptable to the Graduate Faculty), and must pass a qualifying examination. The written and the oral portions of this qualifying

examination must be taken within four semesters after matriculation, if the student has a master's degree; six semesters after matriculation, if the student does not have a master's degree. Any language or other technical skills required by the supervisory committee must be completed within the same time limits after matriculation. If the doctoral degree is not awarded within five years after passing the qualifying examination, the examination must be retaken and passed.

The student is eligible for admission to candidacy after completing structured course requirements and passing the qualifying examination, upon recommendation of the supervisory committee and approval of the Dean of the College and the Director of Graduate Studies. Following admission to candidacy, a student in a Ph.D. program must enroll in course BSC 7980 when engaged in research, data collection, or writing activities relevant to the doctoral dissertation. Advisers should assign the number of credits in this course appropriate to the demands made on faculty, staff, and University facilities, but in no event will the total number of earned dissertation credits be fewer than 16. Students not admitted to candidacy are not eligible to enroll in BSC 7980.

Any graduate work counted toward fulfilling the requirements for the Ph.D. degree must be completed within 7 years after matriculation. A public seminar presenting the dissertation is required. A final oral examination administered and evaluated by the supervisory committee emphasizes the dissertation and the student's general field of research.

Chemistry (CHA/CHM)

Program Description The Department of Chemistry offers Doctor of Philosophy, Master of Science, Non-thesis Master of Arts, and combined Bachelor of Arts - Master of Arts degrees, each with specialization in the 5 traditional areas of chemistry: Analytical Chemistry, Biochemistry, Inorganic Chemistry, Organic Chemistry, and Physical Chemistry. The Chemistry graduate faculty is comprised of 24 full-time senior faculty members, all holding the Ph.D. degree. The combination of a large and strong faculty with a wide variety of courses and electives provides students with programs of study that can be tailored to fit individual needs, while maintaining a sound background in all general aspects of Chemistry.

The excellent research facilities and very low student-faculty ratio combine to afford unique opportunities for advanced study in Chemistry. In addition to the 5 traditional areas, research opportunities also are available in such interdisciplinary and specialized areas as Bio-organic and Bio-inorganic Chemistry, Clinical Chemistry, Environmental Chemistry, Nuclear Magnetic Resonance Spectroscopy, Computer Modeling, Polymers, Lasers and Photochemistry, Marine Chemistry, Photoelectron Spectroscopy (ESCA), Medicinal Chemistry, Electrochemistry, Nucleic Acid Chemistry, and Enzymology.

Admission Requirements: The Department of Chemistry requires:

1. A minimum of a 3.0 grade point average in all undergraduate chemistry course work (including one year of general chemistry, one year of organic chemistry, one year of physical chemistry, one semester of quantitative analysis, one semester of instrumental analysis, one semester of advanced inorganic chemistry, and one semester of biochemistry),
2. A minimum of a 3.0 grade point average in the last two years of undergraduate coursework,
3. A combined total of 1000 on the quantitative and verbal parts of the Graduate Record Examination,
4. Satisfactory letters of recommendation from three or more people who know the student's academic background, and
5. A minimum of 550 on the Test of English as a Foreign Language (TOEFL) for applicants whose native language is not English, and a minimum of 250 on the Test of Spoken English (TSE) for such applicants who are also applying for an assistantship.

Applicants with a 3.0 average in the last 2 years of undergraduate work or a minimum of 1000 on the GRE may be considered for provisional admission, subject to departmental recommendation.

General Program Requirements: All entering graduate students are required to take a series of diagnostic examinations. These examinations are in the five traditional areas of chemistry. A course of study is then agreed upon with each student, according to the performance on the diagnostic examinations, previous academic performance, and stated academic preferences and goals. Successful performance on diagnostic examinations may permit waiving of core course requirements but will have no effect on hour requirements.

Once a major professor has been assigned and/or a student occupies or utilizes significant space or facilities for research or analogous scholarly activity directly pertinent to the generation of a thesis or dissertation, the student shall enroll for no fewer than 2 hours of research and/or thesis and/or dissertation each semester, other than the summer semester, except that no student shall be required for the purposes of this rule to enroll for more than 9 hours total per semester. A student must be registered for an appropriate load (in no case fewer than 2 hours) in the College for the semester in which all degree requirements are satisfactorily completed. Additional requirements may be imposed.

A student who receives three grades below "B" in structured courses required by the advisory committee will be dropped from the program.

Registration in courses entitled Directed Research, Thesis; Master's, or Dissertation: Doctoral must be with the approval of the major professor and must be commensurate with each student's research plan. A student who enrolls in courses entitled Thesis; Master's but does not submit a thesis or Dissertation: Doctoral but does not submit a dissertation will not be certified for graduation.

Students in a graduate program must be either active or on a leave of absence granted by the College. Students on active status must register for a minimum of 1 hour of graduate level course work each semester. The student is responsible for meeting all requirements of the degree program.

Requirements for the M.S. Degree All students must meet University requirements SEE PAGES 13-16.

Course Requirements Each student is required to pass three of the five graduate level core courses (3 hours each). Three additional 6000-level lecture courses in chemistry (3 hours each) must also be completed. A minimum of 4 semesters seminar registration and attendance is required.

Thesis The student must carry out a research project under the direction of a faculty member, and the results of the research shall comprise the M.S. Thesis.

Comprehensive Examination Upon completion of thesis research and preliminary approval of the thesis by the supervisory committee, the student will undergo an oral examination on the results of the research and related topics.

Certificate of Concentration in Solid and Hazardous Waste Management See College of Engineering, page 133.

Requirements for the Non-thesis M.A. Degree

Course Requirements All requirements for the M.S. degree not relating to thesis must be met. A total of 26 hours must be in formally structured Chemistry courses; 16 hours must be at the 6000 level. A review paper on a topic approved by the Supervisory Committee is required.

Requirements for the Ph.D. Degree All students must meet University requirements SEE PAGE 13-16.

Course Requirements Each student is required to complete a minimum of 18 hours of formal, regularly scheduled course work (i.e., six 3-credit lecture courses). This course work must include at least two areas (one of which is the student's major area); at least 12 hours must be at the 6000 level. A minimum of 7 semesters seminar registration and attendance is required.

Tools of Research A reading knowledge of the Chemical literature in a foreign language (usually French, German or Russian) must be demonstrated. Chemistry graduate students are also expected to demonstrate proficiency in a computer language.

Major Comprehensive Examination A comprehensive examination must be passed in the student's area of specialization. This examination must be passed within two (2) years from the end of the student's first academic year and at least one year before graduation.

Admission to Candidacy Completion of the foregoing requirements admits the student to candidacy for the Ph.D. The supervisory committee must evaluate the student for admission to candidacy within 6 semesters after matriculation. If the committee does not recommend admission to candidacy by that time, it may dismiss the student or grant a one semester extension. At the end of the additional semester (the 7th semester of enrollment, excluding summers), the committee must recommend that the student be admitted to candidacy or be dismissed from the program.

Following admission to candidacy, a student in a Ph.D. program must enroll in CHM 7980 when engaged in research, data collection, or writing activities relevant to the doctoral dissertation. Advisers should assign the number of credits in this course appropriate to the demands made on faculty, staff, and University facilities. Students not admitted to candidacy are not eligible to enroll in CHM 7980.

Research The student, under the supervision of a major professor, must complete an original research project in Chemistry. Enrollment in Directed Research (CHM 7820) and Dissertation: Doctoral (CHM 7980) courses will constitute the major portion of the 90 hours required for the Ph.D. degree.

Final Dissertation Defense When the supervisory committee has inspected the final draft (final unbound form; typewritten and ready for duplication, with the exception of possible minor corrections) of the dissertation and found it suitable for presentation, the major professor will complete a form requesting the scheduling and announcement of the final oral examination. The request form will be submitted via the Chemistry Graduate Office to the College Dean and the Dean of the Graduate School at least two weeks prior to the scheduled oral examination.

The examination committee shall consist of a chairperson and the members of the student's supervisory committee, including the major professor(s). The chairperson of the examination committee shall be appointed by the Dean of the College and shall not be a member of the student's supervisory committee or the department or program in which the degree is sought.

During the oral presentation which is open to the public, the student may expect questions concerning the details and significance of the research. Final approval of the candidate's degree will require approval by a majority of the examination committee, as well as the chairperson.

Classics (CLA)

USF's Classics Program is associated with the Classics Department at the University of Florida in a Cooperative Masters Program leading to the master's degree. For a full description of this arrangement, contact the Program Advisor.

Communication (SPE)

The Department of Communication offers a broad and integrated approach to communication studies that embraces the traditions of the humanities, the convergence of rhetorical and communication theory, and the relations among aesthetic, humanistic, and scientific approaches to inquiry. Students are encouraged to examine the pragmatics of rhetorical and communication theory in such settings as business and industry, government, education, medicine and health care, media, the arts, and the family. The department offers course work leading to the Master of Arts degree and the Doctor of Philosophy.

Admission Requirements SEE PAGES 13-16.

Special requirements for M.A. Program Admission

1. A 3.2 GPA during last two years of undergraduate work, or a minimum Quantitative/Verbal score of 1000 on the GRE General Test;

2. Two letters of reference from undergraduate professors with whom the candidate has studied during the last two years of the B.A. program;
3. A substantive undergraduate research paper (or other evidence of writing ability) focusing on a topic appropriate to the rubric of communication;
4. A 3-4 page statement, describing the student's background, purpose for attending graduate school, and career goals.

No more than 6 hours may be transferred from another institution.

Requirements for the M.A. Degree

I. Core Requirements (12 hours)

COM 6001 (3) COM 6400 (3) ORI 6930 (3) or 6435 (3) SPC 6231 (3)

COM 6001 must be taken the first time it is offered after the student is admitted to the graduate program. Remaining core courses must be completed within the first three semesters of admission, summer semester excepted.

II. Program Plans

A. Thesis Program (30 hours)

In addition to the 12 hours of core requirements specified above, each student will complete 15 hours of elective course work, 6 hours of which may consist of a course or courses from other departments within this or other universities, and must have adviser approval. Each student must complete at least 3 hours of thesis credit and submit an approved thesis.

B. Non-Thesis Program (36 hours)

In addition to the 12 hours of core requirements, 24 hours of elective course work are required, 9 of which may be taken as a cognate area of study pending adviser approval and an approved plan of study.

Comprehensive Examinations All students must pass both written and oral comprehensive examinations.

Special Requirements for Ph.D. Program Admission

1. A 3.2 GPA during the last two years of undergraduate study and 3.5 GPA in graduate work.
2. A GRE score normally in excess of 1000 in the combined verbal and quantitative categories.
3. Three strong letters of recommendation from qualified people familiar with the prospective student's academic and scholarly potential.
4. A formal statement of purpose or intent which reveals the applicant's carefully considered and explicit educational and professional objectives.
5. A sample of scholarly writing which shows promise of ability to conduct research and/or write effectively for a scholarly or professional audience.
6. Applicants with no previous graduate work will be expected to exceed the minimum standards and show exceptional potential to become scholars.

Program for the Ph.D. Degree

Students normally take between 30 and 40 hours of coursework beyond the M.A. degree (not counting credits for dissertation research). Completion of the Ph.D. program in Communication normally requires a minimum of three years with at least one year in continuous full-time residence. To qualify for graduation from the Ph.D. program in Communication, a student must complete the following:

1. Establish a supervisory faculty committee approved by the Director of Graduate Studies and the Dean of the Graduate School.
2. Prepare a Plan of Study approved by the student's supervisory committee. The Plan of Study expresses the ways in which the student will show evidence of the following: (a) expertise in one of the central domains of communication study; (b) expertise in the research methodologies needed to carry out original research in the specialized area of concentration and; (c) expertise in a cognate area of study outside the department (at least 9 hours of coursework), which shall fulfill the tools of research requirement of the graduate school.
3. Present and defend a scholarly diagnostic paper to the Ph.D. Colloquium by the end of the first 18 hours of coursework.

4. Pass a written qualifying examination covering the student's area of specialization, cognate field of study, and methodological competence by the end of 36 hours of coursework. This examination will be prepared and evaluated by the student's supervisory committee.
5. Complete and defend a dissertation approved by the students's dissertation committee which must include at least one member of the graduate faculty outside the Department.

Communication Sciences and Disorders (AUD/ARH/SPP)

The Department of Communication Sciences and Disorders is devoted to the study of normal and disordered human communication. Courses and practica provide the student with principles, research methods and application of knowledge about the spectrum of verbal and non-verbal communication. Diagnosis and remediation of communicative problems dominate the clinical component of this course of study.

The Master of Science degree offered through the Department is structured to meet the preparation requirements of the American Speech-Language-Hearing Association for the Certificate of Clinical Competence. In addition to core material, each student may elect to pursue a program of specialization in the areas of Speech-Language Pathology, Audiology, or Aural Rehabilitation (Hearing Impaired). The Speech-Language Pathology and Audiology programs are accredited by the Educational Standards Board of the American Speech-Language-Hearing Association.

The department offers a concentration in Speech and Hearing Sciences at the undergraduate level. This concentration, combined with other requirements, culminates in a Bachelor of Arts degree in Interdisciplinary Social Sciences (ISS).

Applicants holding a baccalaureate degree in ISS (concentration in Speech-Language-Hearing Sciences) from USF or a degree in Communication Sciences and Disorders from another accredited college or university with appropriate prerequisite coursework will be eligible for admission to the M.S. degree programs if the following minimum requirements are met:

1. A score of 1000 or greater for the GRE, plus a GPA of 3.0 for the last 2 years of undergraduate course work.
2. Submission of three letters of recommendation.
3. Demonstration of competency in communication skills as determined by the chairperson or delegate.

Applicants holding a baccalaureate degree in a discipline other than Communication Sciences and Disorders and whose degree is from an accredited college or university may be admitted conditionally to the M.S. programs and complete appropriate prerequisites. Prerequisite courses will not be credited toward M.S. requirements except with the approval of the department chairperson.

Core Requirements for the M.S. degree for all majors

All majors must complete the following Core Requirements. (7 Credits)

SPA 5150L (2) (Speech-Language majors only)

SPA 5132 (2) (Audiology majors only.)

SPA 5552 (2) SPA 6601 (1) SPA 6805 (2)

Program Plans

1. **Thesis Option:** In addition to the Core Requirements, each student will complete 27 hours of elective course work and sufficient clinical practicum hours to satisfy the clock hour requirements as stated below. Also, each student must complete at least 1 hour of SPA 6910 (Directed Research) and a minimum of 5 hours of SPA 6971 (Thesis) and submit an approved thesis.
2. **Non-thesis Option:** In addition to the Core Requirements, each student will complete 27 hours of elective course work and sufficient clinical practicum hours to satisfy the clock hour requirements as stated below. Also, each student must complete an additional 9 hours of coursework and of these, at least 6 hours must

be from within the department while 3 hours may be selected from another department. Prior to initiation of non-thesis option course work, the student must obtain approval from an adviser and the department chair.

Requirements for the M.S. Degree in Speech-Language Pathology – Post Baccalaureate (SPP) In addition to general University requirements for the master's degree, candidates must complete at least 34 hours of regularly scheduled academic coursework at the graduate level. In addition, students will enroll in sufficient graduate clinical practicum to meet a minimum of 350 clock hours to fulfill the requirements of the American Speech-Language-Hearing Association. Of these hours, at least 250 clock hours must be in the specialization area at the graduate level in which certification is being sought. Also required for graduation are the maintenance of a 3.0 GPA in graduate courses, the attainment of clinical competence determined by a GPA of 3.0 in clinical practica, satisfactory passage of the National Teacher Examination in the specialty of Speech-Language Pathology and successful completion of a thesis or non-thesis option. With the department chairperson's approval, a student with an existing bachelor's degree and appropriate prerequisites may plan the degree program from among the following courses. Course selection is based on prescribed content areas within the discipline.

SPA 5150 (3)	SPA 5150L (2)	SPA 5303 (3)	SPA 5403 (3)
SPA 5408 (3)	SPA 5506 (1-8)	SPA 5552 (2)	SPA 6106 (3)
SPA 6232 (3)	SPA 6245 (3)	SPA 6322 (3)	SPA 6401 (3)
SPA 6410 (3)	SPA 6413 (3)	SPA 6415 (3)	SPA 6505 (1-9)
SPA 6553 (3)	SPA 6601 (1)	SPA 6805 (2)	SPA 6906 (var)
SPA 6910 (var) <u>or</u>	SPA 6971 (var)	SPA 6930 (3)	SPA 7931 (3)

Requirements for the M.S. Degree in Clinical Audiology – Post Baccalaureate (AUD) General University requirements for graduate work must be fulfilled, and a minimum of 35 hours of regularly scheduled academic coursework at the graduate level. In addition, students will enroll in sufficient graduate clinical practicum to meet a minimum of 350 clock hours to fulfill the requirements of the American Speech-Language-Hearing Association. Of these hours, at least 250 clock hours must be in the specialization area at the graduate level in which certification is being sought. Also required for graduation are the maintenance of a 3.0 GPA in graduate courses, the attainment of clinical competence determined by a GPA of 3.0 in all clinical practica, satisfactory passage of the National Teacher Examination in the specialty of Audiology and successful completion of a thesis or non-thesis option. With the department chairperson's approval, a student with a bachelor's degree and appropriate prerequisites may plan a program from among the following. Course selection is based on prescribed content areas within the discipline.

SPA 5303 (3)	SPA 5312 (3)	SPA 5328 (3)	SPA 5403 (3)
SPA 5506 (1-8)	SPA 5552 (2)	SPA 6305 (3)	SPA 6316 (3)
SPA 6314 (3)	SPA 6322 (3)	SPA 6345 (3)	SPA 6354 (3)
SPA 6401 (3)	SPA 6422 (3)	SPA 6505 (1-9)	SPA 6601 (1)
SPA 6805 (2)	SPA 6906 (var)	SPA 6910 (var) <u>or</u>	SPA 6971 (var)
SPA 6930 (3)	SPA 7931 (3)		

Requirements for the M.S. Degree in Aural Rehabilitation (Hearing Impaired) – Post Baccalaureate (ARH) Students interested in certification as Teacher of the Hearing Impaired must fulfill all requirements for the Certificate of Clinical Competence in Audiology or in Speech-Language Pathology, as well as all university and departmental requirements as described under the requirements for the M.S. degree in Clinical Audiology or Speech-Language Pathology. In addition, programs for Teachers of the Hearing Impaired will be planned from among courses offered by the appropriate teacher preparation areas within the College of Education, and must also include the following:

SPA 5328 (3)	SPA 6326 (3)	SPA 6329 (2)	SPA 6422 (3)
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Criminology (CCJ)

The major in Criminology provides students with an in-depth exposure to the total criminal justice system, including law enforcement, detention, the judiciary, corrections, and probation and parole. The program concentrates on achieving balance in the above aspects of the system from the perspective of the criminal justice professional, the offender, and society.

The objective of the graduate program in Criminology is to develop a sound educational basis for professional training in one or more of the specialized areas comprising the modern urban criminal justice system.

Requirements for the M.A. Degree The Department of Criminology offers work leading to the M.A. degree in two main areas of specialization: Urban Law Enforcement Administration and Community Corrections. Additional courses of study can be tailored to suit individual student needs (pre-law, advanced graduate work, etc.).

In addition to meeting all general admission requirements of the University, each graduate applicant must submit three letters of recommendation and a letter of intent, and must have passed an acceptable undergraduate social science statistics course (CCJ 4700 or the equivalent).

Note 1: Individuals who wish to take courses in the graduate program as non-degree seeking students must contact the Director of Graduate Studies for the department prior to their first class appearance. Such students will usually be prohibited from enrolling in CCJ 6910, Directed Research.

Note 2: All course work counted toward the degree must have the prior approval of the Director of Graduate Studies of the Department of Criminology. Such work may include up to 6 hours outside the department.

The Master of Arts degree is granted upon completion of one of two program options:

1. **Thesis Option** 32 hours of CCJ course work, which must include:

CCJ 6285 (3)	CCJ 6605 (3)	CCJ 6705 (3)
CCJ 6707 (4)	CCJ 6920 (3)**	CCJ 6971 (var)

An oral defense of the thesis is required after the final draft of the thesis has been accepted by the candidate's supervisory committee.

2. **Area Project Option** 35 hours of CCJ course work, which must include:

CCJ 6285 (3)	CCJ 6605 (3)	CCJ 6705 (3)
CCJ 6707 (4)	CCJ 6920 (2)**	CCJ 6974 (3)

** Should be taken during the first semester of the program.

The non-thesis Area Project Option is intended primarily for in-service practitioners who aspire to administrative positions or who are currently holding such a position and who do not intend to continue their graduate education beyond the M.A. degree. Participation in the non-thesis option is by departmental permission only.

The project itself will concern one or more specific aspects of the candidate's chosen area of specialization so that students may apply their graduate studies and skills to practical problems directly related to their own work and agency. Project proposals must be approved by the Director of Graduate Studies and by the student's supervisory committee. As a matter of course, those developing projects will produce a written report in a format appropriate for explaining and sharing the project's outcomes.

Further information on any aspect of the degree program may be obtained by writing the Director of Graduate Studies, Department of Criminology.

English (ENG)

Requirements for the M.A. Degree In English with a Specialization In Literature

The M.A. in English is designed primarily to train college teachers. The program requires study of both literature and composition.

Admission Requirements SEE PAGES 13-16. For fall admission, application must be made by April 1; for spring (January) admission, by October 1.

Special requirements

1. An undergraduate English major with an overall GPA of at least 3.3 and an English GPA of at least 3.5.
2. A total quantitative and verbal GRE General Test score of 1000 or higher.
3. 3 letters of recommendation from former literature instructors sent to the Director of Graduate Studies, Department of English, University of South Florida, Tampa, FL 33620.
4. A 3-4 page statement describing the student's background, purpose for attending graduate school, and career goals.

Course Requirements

1. ENG 6009 (3) (this must be taken early in the sequence)
2. 30 additional credit hours, which must include:
 - a) LAE 6375 (3)
 - b) One of the following:
ENL 6206 (3) ENL 6216 (3) ENL 6227 (3) ENL 6228 (3)
 - c) One of the following:
ENL 6236 (3) ENL 6246 (3) ENL 6256 (3) ENL 6276 (3)
 - d) One of the following:
AML 6017 (3) AML 6018(3) AML 6027 (3)
 - e) LIT 6934 (3)
 - f) ENG 6018 (3)
 - g) ENG 6971 (3) Thesis on a literary subject

Options: A student may transfer up to 6 hours of credit from another university. Up to 6 hours may be taken in another department (the courses to be approved in advance by the Department of English Graduate Committee).

A student receiving one grade of "C" or lower in a graduate course will be placed on academic probation. A student receiving two grades of "C" or lower will be dismissed from the program, subject to a review by the departmental Graduate Committee.

Comprehensive Examination The student with a specialization in Literature will be asked to write a comprehensive exam. Specifics of the exam are described in the department's Graduate Handbook.

Requirements for the M.A. Degree in English with a Specialization in Rhetoric and Composition The specialization in rhetoric and composition allows students to do half their M.A. work in this area. The program is designed to train college teachers.

Admission Requirements See M.A. Program above.

Course Requirements

1. ENG 6009 (3) (this course must be taken early in the sequence)
2. LAE 6375 (3)
3. ENC 6336 (3)
4. Two of the following:
ENC 6700 (3) ENC 6017 (3) ENC 6720 (3)
5. LIT 6934 (3)
6. One of the following:
AML 6017 (3) AML 6018 (3) AML 6027 (3)
7. One of the following:
ENL 6206 (3) ENL 6216 (3) ENL 6227 (3) ENL 6228 (3)
8. One of the following:
ENL 6236 (3) ENL 6246 (3) ENL 6256 (3)
9. One elective in American or British literature.
10. ENG 6971 (3) Thesis on a Rhetoric and Composition Subject.

Options See above.

Comprehensive Examination Students in this program must pass a comprehensive examination. Specifics of the exam are described in the department's Graduate Handbook.

Requirements for the Ph.D. Degree The goal of this program is to produce teacher-scholars who have a good general knowledge of English and a special knowledge in

their fields of concentration. Each student in the program must take courses in teaching college English; these courses include actual teaching experience.

Admission Requirements SEE PAGES 13-16. See above for admission deadlines.

Special requirements

1. One of the following:
 - a. An M.A. in English and a graduate GPA of 3.7.
 - b. An M.A. in another discipline, in which case the student will be required to take supplementary graduate work and pass a preliminary comprehensive exam before being officially admitted to the program.
2. A verbal GRE Test score of 650 or higher.
3. A 3-4 page statement, describing the student's background, purpose for attending graduate school, and career goals. Applicants must also include a critical essay written in a graduate humanities course accompanied by verification from the professor for whom it was written.
4. Three letters of recommendation sent to the Director of Graduate Studies, Department of English. At least two of these letters should be from professors who have taught the applicant at the graduate level.

Program Requirements The Ph.D. in English involves a minimum of 30 hours of course work beyond the M.A. degree, exclusive of credits devoted to the foreign language and tools-of-research requirements and the doctoral dissertation. Included in these hours, if not taken on the Master's level, must be ENG 6009 or its equivalent, LAE 7376, ENG 6018, and ENG 7939, which must be taken twice. A dissertation is required.

After completing the necessary course work (which will be selected after consulting with the advisory committee), a student must take a nine-hour written doctoral comprehensive exam. Students passing this exam and fulfilling the foreign language/tools-of-research requirements are admitted to doctoral candidacy. Students failing this exam more than once are dismissed from the program.

After completion of an approved dissertation, the student will defend this dissertation in a two-hour oral examination and may also be examined in the major field. The doctoral degree is awarded after successful completion of the dissertation and the dissertation defense.

A student may transfer no more than 6 hours of graduate credit from another university. No more than 8 hours of credit may be taken in another department (the courses must be approved in advance by the departmental Graduate Committee).

A student receiving one grade of "C" or lower in a graduate course will be placed on academic probation. A student receiving two grades of "C" or lower will be dismissed from the program, subject to a review by the departmental Graduate Committee.

Geography (GPY)

Requirements for the M.A. Degree All students must complete 30 hours in graduate courses, following one of the two plans outlined below. An oral comprehensive examination covering the general field of Geography is required for graduation, and the student must demonstrate ability to translate into English the pertinent scientific literature in one modern foreign language. The foreign language requirement may be met by taking an introductory computer course and one advanced computer course approved by the Graduate Advisor in Geography. Foreign students whose native tongue is not English may use English as their foreign language.

All students must take the following five core courses:

GEA 6195	GEO 5058	GEO 6119	GEO 6209C
GEO 6428			

Additional course requirements:

Thesis Track: GEO 6971

Non-Thesis Track:

Teaching Track: GEO 6945 GEO 6947

Internship Track: GEO 6944

The remaining hours must be approved by the student's committee and major professor, and may include up to 6 credits outside the department.

An oral defense of thesis is required.

Geology (GLY)

Geology incorporates the fundamentals of biology, chemistry, mathematics, and physics to study the earth, and the processes which affect our planet. The Department of Geology offers the M.S. degree in geology and the initiation of a Ph.D. program is expected shortly.

The present graduate program includes specializations in carbonate geology, coastal geology, geochemistry, hydrogeology, mineralogy, paleontology, rock deformation, and volcanology. The current faculty positions number 10 and two additional faculty are expected to be added in the next three to five years as the doctoral program is initiated.

Special Admission Requirements for the M.S. Program A GPA of at least 3.0 is required for the last 60 credits (2 years) for admission. All applicants must take the Graduate Record Examination (GRE) and score at least 1000 on the combined verbal and quantitative portions. Applicants are encouraged, but not required, to take the advanced subject portion of the GRE. International students are required to take the TOEFL examination. A structured field course (normally a summer field course in geology) is required. Lastly, the department requires 3 letters of recommendation and a personal statement.

Requirements for the M.S. Degree See Pages 13-16 for University requirements. The Department of Geology requires a candidate for the M.S. Degree to complete at least 30 graduate credit hours. These hours are subdivided into 24 hours of structured coursework, of which at least 10 must be at the 6000 level, and at least 6 hours in thesis research (GLY 6971). The curriculum for a Geology graduate student varies depending on the area of research interest. Specific course work for the degree is determined via consultation between the student, his/her primary advisor and his/her student advisory committee. In addition to course work, graduate students are required to make a public presentation. Other pertinent information regarding graduate study is contained in the Department's Graduate Student Handbook, which is available upon request.

All degree candidates are required to maintain satisfactory academic progress at all times. Satisfactory academic progress toward the M.S. degree in geology is defined as progress in course and thesis work. Evidence of academic progress includes timely completion of departmental requirements such as selecting a primary advisor, forming a student advisory committee, completion of any prerequisites or deficiencies, timely progress toward completion of the thesis or project (non-thesis track) including meeting with advisory committee once each semester, maintaining a satisfactory GPA, defending a thesis or project proposal, and making a public presentation.

In addition, a non-thesis M.S. option is available in hydrogeology. This program requires 33 hours of structured coursework, and a 3 credit hour internship/project. The curriculum includes a minimum of 3 courses in Civil Engineering and requires a comprehensive exit exam. A list of courses approved for inclusion in the non-thesis option is available from the department.

Certificate of Advanced Studies In Hydrogeology The department offers a Certificate of Advanced Studies in Hydrogeology which requires 24 hours of structured coursework. Details are available from the department.

Certificate of Concentration in solid and Hazardous Waste Management See College of Engineering, page 133.

Gerontology (GEY)

Gerontology is the study of the process of human aging in all its aspects: physical, psychological, and social. In the Department of Gerontology, particular emphasis is placed on educating students who, in their professional careers, will work to sustain or improve the quality of life of older people. The Department offers the degree of Master

of Arts in Gerontology, with either a thesis or non-thesis option. In addition to a core curriculum, concentrations are offered in research, program administration, and direct service. The thesis option is primarily for those students who wish to pursue a doctoral degree or who are interested in a research career.

Admission Requirements SEE PAGES 13-16.

Special requirements:

1. A GPA of 2.5 for the last 2 years of the bachelor's degree and a combined (Verbal and Quantitative) GRE score of at least 1000, or a GPA of 3.0 or greater and a combined (Verbal and Quantitative) GRE score of at least 900.
2. Students electing the thesis option may be required to have higher scores on the GRE and/or a higher GPA.

Applicants with significant experience and a demonstrated commitment to the field of aging may be given special consideration.

Note: In addition to the Graduate Studies application, a program application, obtainable from the Department of Gerontology, is required.

Requirements for the M.A. Degree The M.A. degree requires four semesters of full-time study (or the part-time equivalent thereof), including one semester of supervised field experience for those in the non-thesis option.

Students with up to 12 hours of certain undergraduate or graduate courses in gerontology may complete the M.A. program with a minimum of 33 hours in approved courses. Students without sufficient prior background in gerontology at the undergraduate or graduate level are required to complete the minimum hours of approved courses in their concentration.

Prior to entering the program, each student must confer with a departmental adviser. A review of the student's academic background and career interest will determine the approved individual curriculum and the minimum number of hours required for completion of the M.A. Required courses include:

GEY 5620 (3)	GEY 6450 (3)	GEY 5630 (3)	GEY 6500 (3)
GEY 5642 (3)	GEY 6600 (3)	GEY 6325 (3)	GEY 6613 (3)

Students with certain undergraduate or transfer graduate courses in gerontology may be exempt from taking GEY 5620, GEY 5642, GEY 6450, and/or GEY 6613. All thesis-option students must, however, complete GEY 6450.

Additional course requirements

Concentration 1. Research

GEY 6455 (3)

Plus, 9 hours of electives in administrative or direct service courses;
6 hours of thesis credits.

Concentration 2. Program Planning and Administration

GEY 6326 (3) GEY 6455 (3) GEY 6501 (3)

Plus, 6 hours in Public Administration or Public Health courses.

In this concentration the student may select, with departmental approval, an alternative concentration in Long-Term Care Administration and may substitute two Long-Term Care courses for the Public Administration or Public Health electives. Additionally, 6 hours of internship are required.

Concentration 3. Direct Service and Mental Health

GEY 6612 (3) GEY 6614 or GEY 6615 (3)
GEY 6616 (3) GEY 6617 (3) GEY 6618 (3)

Six hours of internship credit are required.

General Information Following completion of the necessary coursework there is a comprehensive examination designed to test the students' knowledge of, and ability to integrate, key concepts and information in the field of gerontology. This examination must be taken and passed before the student begins the required field placement or thesis option. In addition to the comprehensive examination, which must be passed by all students in the M.A. program, students electing the thesis option must successfully pass an oral examination on the thesis. See page 26. There are no language requirements.

Certificate in Mental Health and Aging In this concentration the student can meet the educational requirements for licensure as a Mental Health Counselor. Students with an M.A. in a related field may, with departmental approval, take the sequence in mental health and receive a certificate.

History (HTY)

The Department of History offers the M.A. degree. Members of the graduate faculty in History have earned recognition as teachers, scholars, and contributors to the community.

Requirements for the M.A. Degree The Department of History offers both a thesis and a non-thesis Master of Arts degree organized around the following fields:

- Field 1: American History to 1877
- Field 2: American History since 1877
- Field 3: Ancient History
- Field 4: Medieval History
- Field 5: Early Modern Europe to 1789
- Field 6: Modern Europe since 1789
- Field 7: Latin America

The thesis program emphasizes preparation for further graduate study. The non-thesis program is designed to meet the needs of those students seeking a terminal degree at the master's level.

In addition to the general requirements of the University, a candidate is required to complete 38 hours in the following distribution: a 4-hour core course, 16 hours in a major field in history, 8 hours in a minor field, plus HIS 5215. Students in the thesis program will be expected to complete the remaining 8 hours in thesis credits. Non-thesis degree students must complete the remaining hours of their program in 6000 level regularly scheduled courses.

Of the 38 hours required for the Master of Arts with thesis, at least 20 must be in formal, regularly scheduled course work. For the Master of Arts without thesis, at least 28 must be in formal, regularly scheduled course work. A minimum of 16 must be at the 6000 level. Subject to the satisfaction of above requirements, courses at the 5000 level are acceptable as part of a planned degree program. In special circumstances, major advisers may approve up to 6 hours at the 4000 level with the definite understanding that additional and superior work will be required of the graduate student. The core course, HIS 6112, "Analysis of Historical Knowledge" and HIS 5215, "History Writing", are required of all M.A. students.

A reading proficiency in one foreign language must be demonstrated by students in the thesis degree program. A satisfactory preparation in the core course program, two fields, and the completion of a comprehensive examination are required of all M.A. students for graduation.

Students with a major field in American History and with a thesis topic that does not require use of a foreign language may substitute quantitative methods for the language requirements. The quantitative methods option will be fulfilled by successful completion with a grade of at least "B" in one of the following courses: ANT 5937; EDF 6407; POS 5736.

Upon admission, M.A. students will select an adviser who will arrange their programs and schedules of appropriate courses in their anticipated major field of study. The student, in consultation with the adviser, solicits two other members to serve on a supervisory committee.

Humanities (HUM)

The Humanities Program is an interdisciplinary curriculum that studies the visual arts, music, literature and the culture from which they emerge. Secondary sources are used sparingly; students are encouraged to make a vigorous, personal response to specific works of art, literature, and music.

Master of Liberal Arts (MLA)

The Master of Liberal Arts program is designed to offer students an opportunity to study from an interdisciplinary perspective the ideas and works that have shaped world culture. Two program options are available: the Liberal Studies Sequence, though broadly interdisciplinary, focuses on a concept, movement, or idea; the Humanities Sequence requires a concentration in the Department of Humanities.

Admission Requirements SEE PAGES 13-16.

I. Liberal Studies option Total required hours: (33)

Courses 30 hours in courses from the approved course list.

At least 9 but no more than 12 hours must be taken in a single department.

At least 20 hours must be at the 6000 level; 4 hours may be at the 4000 level.

Satisfactory completion of a written comprehensive examination.

Thesis (3); Thesis Defense.

II. Humanities option Total required hours: (33)

Courses 30 hours from the approved list. 21 hours must be in Humanities

courses and 9 in approved outside electives. At least 15 hours must be at

the 6000 level; 4 hours may be at the 4000 level.

Satisfactory completion of a written comprehensive examination.

Thesis (3); Thesis Defense.

Both options require the student to work closely with an assigned adviser. Prior to registering for the second semester in the Liberal Studies Sequence, the student must submit in writing to the Director a signed statement of intent to focus on a particular concept, idea, theme, or the like. This statement must be approved, dated, and signed by the Director and made a part of the student's record. Subsequent courses selected for study are expected to center around this stated focus. Variation from this focus must be approved by the Director.

Courses may be taken from any of the programs listed below:

American Studies	Anthropology	Art
Communication	Criminal Justice	English
Geography	History	Humanities
Interdisciplinary Social Science		Language
Mass Communications	Philosophy	Political Science
Religious Studies	Sociology	

Specific course listings for each program may be obtained from the MLA office, CPR 363.

Library and Information Science (ALI)

The M.A. program in Library and Information Science has been accredited by the American Library Association since 1975. Students are prepared to assume a wide variety of service and leadership positions in libraries and information centers.

Mission The mission of the Division of Library and Information Science at USF is in part to build upon the mission of the University in offering strong teaching, research, and service to the University and the community. In addition to the University's definition of "community," the Division has received a charge from the Board of Regents that "...all library education and educational media programs be made the responsibility of FSU and USF to assure access to nationally accredited programs statewide as funding becomes available..." The Division further interprets the "community" as being without geographical boundaries since students from many states and foreign countries enroll in the program.

Goals

1. Serve the needs of society for library and information personnel to assume a wide variety of service and leadership roles.
2. Add to the body of knowledge in library and information science.
3. Assist students in developing the attitudes necessary for involvement in the social, intellectual, cultural, economic, and scientific interests of the community.

4. Encourage students and graduates to establish high standards of intellectual inquiry through research.
5. Provide an intellectual environment in which the student may develop creative self-direction.
6. Impress upon students the social significance of libraries in a democratic society.
7. Foster an understanding of the role of the library/information professional and information agencies in a multicultural society.
8. Promote the advancement of the library and information professions through: (1) faculty research and publication and (2) continuing education opportunities for professionals.
9. Uphold the Library Bill of Rights, the First Amendment to the Constitution, and the concept of intellectual freedom which is expressed in the statements on labeling and on freedom to read prepared by the American Library Association in conjunction with other professional organizations and incorporated in the **Intellectual Freedom Manual**.

Special Admission Requirements In addition to University and College admission requirements, the School of Library and Information Science requires each applicant to submit a typewritten statement expressing personal reasons for wanting to pursue graduate study in librarianship.

Requirements for the M.A. Degree All students must meet University requirements (Pages 13-16)

A minimum of 36 semester hours is required for the Master's degree program. Students must maintain an average of "B" or better and no more than two grades of "C" will be accepted. Transfer credit from other recognized graduate schools is limited to six semester hours taken within the last five years with grades of "B" or better. All transfers must be approved by the candidate's faculty advisor. Transfer credits must be posted to a student's permanent record no later than one full term prior to graduation.

Required Courses: Four basic, or core courses, are required of all students seeking the Master's degree in Library and Information Science: LIS 5404; 6608; 6271; 6735, plus a planned program of electives developed for each student as approved by with the advisor.

Courses Outside the LIS Degree-seeking students are permitted to enroll in courses outside the Division of Library and Information Science when, in the context of the development of a purposeful program, an interdisciplinary approach seems appropriate. Students must obtain the approval of their faculty advisor.

Marine Science (MSC)

Program Description The Department of Marine Science (DMS) at the University of South Florida offers M.S. and Ph.D. degrees in Marine Science. The student may emphasize biological, chemical, geological, or physical oceanography, or develop an interdisciplinary program in Oceanography through course work and thesis or dissertation research. More than 100 students are currently pursuing degrees under the direction of 23 full-time faculty. Study areas range from estuarine and near-shore systems to remote areas of the Pacific, Atlantic and Indian Oceans, as well as the Arctic and Antarctic. Additional information on faculty research and departmental facilities are available from the department upon request.

The department's location on St. Petersburg's Bayboro Campus allows immediate access to Tampa Bay and the Gulf of Mexico. Bayboro Harbor is home port to the R/V Bellows (71 ft.) and the R/V Suncoaster (110 ft.) operated by the Florida Institute of Oceanography (FIO) for the entire State University System. The department's principal building is shared with FIO and is adjacent to the Florida Marine Research Institute (FMRI), the research arm of the Florida Department of Natural Resources (DNR). In October 1992, construction will commence on a new research building to be shared by DMS and FMRI that will house a remote sensing, satellite data-acquisition center. With the Center for Coastal Geology and Regional Studies of the U.S. Geological Survey and the office of the Tampa Bay National Estuary Program also at Bayboro, our

campus has one of the largest concentrations of marine scientists in the southeastern United States. Many of these scientists serve on advisory committees of DMS graduate students.

Admission Requirements for M.S. and Ph.D. Degrees In addition to University requirements for admission to graduate study, a baccalaureate degree in Biology, Chemistry, Geology, Physics, Mathematics, Engineering, Marine Science, or Oceanography, with a minimum of 2 semesters (or equivalent) of course work in each of the first five disciplines (e.g., Introductory Biology, General Chemistry, Physical and Historical Geology, General Physics, and differential and Integral Calculus) generally provide adequate background for undertaking graduate studies in Marine Science. A student with exceptional qualifications may be accepted to work directly toward the Ph.D. without first earning the M.S. degree. However, in most cases, a master's degree in one of the disciplines listed above will be a prerequisite for Ph.D. studies. Those with such degrees who have an upper-level undergraduate GPA of 3.0 or better and a combined (Verbal and Quantitative) GRE score of 1100 or better are encouraged to apply for either the M.S. or the Ph.D. program, as appropriate. Items required for a complete application are: (1) official transcripts of grades, (2) GRE scores, (3) three letters of recommendation solicited by the applicant, and (4) a 1-2 page essay describing the applicant's research interests in Marine Science. Applications for students entering during fall semester must reach the department by June 1; for spring semester, by October 15. Items (1) and (2) should be sent directly to the Graduate Admissions Office on the USF-Tampa campus; sufficient time should be allowed for processing by that office before materials are forwarded to DMS for review. Only items (3) and (4) are sent directly to DMS. Applications incomplete by the review dates will be reviewed, but may be updated to the next semester (fall or spring only) at the student's request. In addition to the standards noted above, research interests of the prospective student and the availability of suitable laboratory space and equipment will be considered by the Admissions Committee.

The department has graduate fellowship and assistantship funds at its disposal, as well as tuition waivers. In addition many faculty members hire students to work part time on research grants. Those in need of financial support are urged to have their applications completed by February 15. Awards of scholarships and assistantships generally are announced by April 15.

Requirements for the M.S. Degree A committee, consisting of a major advisor and at least 2 other members of the graduate faculty, will be appointed to supervise and guide the program of each student. Students must meet all University requirements. In addition, students must complete (1) a minimum of 32 credits, which includes (2) OCB 6050, OCC 6050, OCG 6050, and OCP 6050 with a grade of "B" or better in each of these core courses, and (3) 6 credits of OCE 6971; (4) a thesis; and (5) a final oral examination conducted by members of the student's advisory committee.

Requirements for the Ph.D. Degree A committee, consisting of a major advisor and at least 4 other members of the graduate faculty, is appointed to supervise and guide the program of the candidate. One member shall be from a science department outside Marine Science. Students must meet all university requirements. In addition, students must complete (1) a core program consisting of OCB 6050, OCC 6050, OCG 6050, and, OCP 6050 with a grade of "B" or better, (2) the "Tools of Research" requirement consisting of proficiency in one foreign language and one other skill directly relevant to the candidate's area of study, (3) a qualifying exam consisting of a written and oral portion, (4) a minimum of 16 credits of OCE 7980, (5) a dissertation, and (6) a dissertation defense examination. A student must receive a passing vote on the qualifying exam from at least 4 committee members before admission to Ph.D. candidacy. Following admission to candidacy, the student must enroll in OCE 7980 when engaged in research, data collection, or writing activities relevant to the dissertation.

Mass Communications (COM)

The M.A. degree program in Mass Communications is designed for students who are seeking advanced studies in preparation for professional and academic careers in mass communications.

The program offers one degree, the Master of Arts in Mass Communications. Students may choose to pursue studies in either Mass Communications, Public Relations, or Journalism.

Admission Requirements SEE PAGES 13-16.

Special requirements

Submit three letters of recommendation and a written statement of the applicant's goals and interests in a graduate degree in mass communications. Applications will not be acted upon until the student's file is complete.

Requirements for the M.A. Degree The Mass Communications Studies program emphasizes the principles and research methods of mass communications. The Public Relations Studies program emphasizes the processes, theories and methods of institutional public communications. The Journalism Studies program emphasizes advanced practices in writing, reporting, editing, and design.

The Mass Communications Studies program requires 36 hours of course work, including a thesis. Twenty-four hours (including 6 hours of thesis) are taken in the Department of Mass Communications. The remaining 12 hours are taken in graduate-level courses offered in other departments of the University.

The Public Relations Studies program requires 36 hours of course work. Students who choose to complete a thesis are required to take 30 hours of course work plus 6 hours of thesis. Students who choose to complete a non-thesis project are required to take 33 hours of course work plus 3 hours of project.

The Journalism Studies program requires 36 hours of course work. A three-hour project is required instead of a thesis. Twenty-one to 24 hours of course work, including 3 hours of project, are taken within the Department of Mass Communications. Twelve to 15 hours are taken in an area of specialization offered in other departments of the University. An advisory committee helps students select an outside specialization.

Students in any emphasis are required to take a comprehensive examination.

Mathematics (MTH)

The Department of Mathematics at the University of South Florida includes 26 graduate faculty members and about 65 graduate students studying for the M.A. and Ph.D. degrees currently, 40 of whom are supported by teaching assistantships. It includes the Institute for Constructive Mathematics, which among other things performs applied research for government and industry, and serves as the editorial base for the international journal *Constructive Approximation*. The international *Journal of Theoretical Probability* also has its editorial office in the Department. The Center for Mathematical Services within the department provides lectures, special programs for secondary students, and in service training programs in mathematics.

Research interests of the faculty include the following fields: Abstract Analysis, Approximation Theory, Celestial Mechanics, Classical Analysis, Coding Theory, Combinatorics, Control Theory, Dynamical Systems, Finite Fields, Geometric Function Theory, Graph Theory, Lie Groups, Mathematical Logic, Nonlinear Analysis, Number Theory, Ordinary and Partial Differential Equations, Pattern Recognition, Probability, Real Analysis, Reliability, Special Functions, Statistics, Stochastic Processes, Theory of Computation, Topological Semigroups, and Universal Algebra.

Admission Requirements In addition to University requirements, entrants to the M.A. program must have (1) a Bachelor's degree in Mathematics, or a related area with strong mathematical content, (2) at least a 650 quantitative score on the GRE, and (3) at least a 3.5 GPA in undergraduate Mathematics courses. Students with insufficient preparation in real analysis and/or abstract algebra will be required to take MAA 4212 and/or MAS 4301 before or during their first semester of study. Entrants to the Ph.D.

program must have a Master's degree in Mathematics, satisfy (2) and (3) above, and have two letters of recommendation indicating an aptitude for doctoral study.

M.A. Requirements (Pure and Applied Mathematics Option)

The University requirements for the Master's Degree must be fulfilled.

Comprehensive Examination Each candidate for the M.A. degree must **either** be examined on a thesis **or** pass one of the written Core Qualifying Examinations, which are offered in January, May and September: the syllabus for each exam is available from the Department, and is reflected in the contents of the corresponding Core Sequence. A student may repeat each examination once.

Course Requirement A candidate must complete at least 30 credit hours in Mathematics, including two sequences, and receive at least a "B" average in both these sequences. A candidate who elects the thesis option must include at least one Core Sequence.

Core Sequences

Algebra: MAS 5107, 5311, 5312

Analysis: MAA 5306, 5307

Logic and Foundations: MHF 5306, 6307

Topology: MTG 5316, 5317

Elective Sequences

Applied Mathematics[‡]: MAP 5407, and MAA 5405 or MAP 5345

Approximation Theory: TBA

Classical Analysis: TBA

Combinatorics*: MAD 5206, 5207, and MAD 6617 or MAT 6932

Complex Analysis: MAA 6406, MAT 6932

Geometry: TBA

Dynamical Systems: TBA

Functional Analysis: MAA 6506, 6507

Integration: MAA 6616, 6617

Nonlinear Functional Analysis: MAA 6506, 6507, MAT 6932

Ordinary Differential Equations and Control*: MAP 5316, 5317, and 5205 or 6336

Partial Differential Equations: MAP 5407, 5345, 6356

Probability: STA 5446, 6447, 6206

Theory of Computation: MAD 5101, 6510, 6616

*The first 2 courses out of 3 suffice for M.A. students

[‡]Not for Ph.D. students

In the lists above, MAT 6932 indicates a Selected Topics course in the area denoted by the title of the sequence. A candidate may petition the Mathematics Graduate Committee to recognize some other sequence of courses as an Elective Sequence.

Language Requirement Each student must either fulfill a computer language requirement, by demonstrating knowledge of two computer languages and completing an approved project, or show competency in either Chinese, French, German, or Russian. Competency is shown by either (a) passing two semesters of a beginning language course with a grade of "B" or better, or (b) passing FRE 1040 or GER 6060 with a "B" or better, or (c) passing a competency examination administered by the Division of Languages, or (d) graduating from a university where the language is the medium of instruction.

Thesis A student who elects the thesis option must register for a minimum of six credit hours in MAT 6971, only six hours of which may be applied towards the 30 hours required for the degree. The final comprehensive examination takes the form of an oral thesis defense, in which the candidate must also demonstrate knowledge of the general subject area of the thesis.

M.A. Requirements (Statistics Option)

The requirements are the same as for the Pure and Applied Mathematics Option, except that each candidate must **either** present a thesis **or** pass the Core Qualifying Examination based on:

Core Sequence

Mathematical Statistics: STA 5446, 5326, 6208

In addition to the Core Sequence, a candidate must complete the following Elective Sequence, and receive at least a "B" average in both these sequences.

Elective Sequence

Computational Statistics: STA 5156, 5167

Ph.D. Requirements (Pure and Applied Mathematics Option)

The University requirements for the Ph.D. Degree must be fulfilled.

Qualifying Examination. A doctoral student is required to pass **two** of the Core Qualifying Examinations required for the M.A. degree (which may have been taken while an M.A. student), and at a level higher than suffices for the M.A. Both must be completed within 13 months after entering the Ph.D. program, unless an extension is granted by the Mathematics Graduate Committee. After passing the Core Qualifying Examinations, the student will select his/her Dissertation Advisor, and a Doctoral Committee will be appointed by the Department Chairperson. The Committee will determine a course of study leading to the written Elective Qualifying Exam, which may be based on one of the Elective Sequences above, possibly supplemented by other material. The syllabus for this exam, and the names of two examiners from the Graduate Faculty, must be approved by the Mathematics Graduate Advisor at least one semester before the exam is to take place. A student is expected to complete all three exams within 25 months after entering the Ph.D. program, unless an extension is granted by the Mathematics Graduate Committee. A student may repeat each examination once.

Language Requirement. This is the same as for the M.A., except that two languages are required; the computer language requirement may be substituted for one language.

Admission to Candidacy. The student should apply for candidacy immediately after completion of the Qualifying Examinations and the Language Requirement.

Course Requirement. The student must complete **four** sequences from among the Core and Elective Sequences, with at least a "B" average in each sequence, and at least 16 hours in MAT 7980. Two Elective Sequences with a course in common will be counted as one sequence. A student who passes a core Qualifying Exam will be considered to have completed the corresponding Core Sequence.

Dissertation. The dissertation is expected to contain new mathematical results which are worthy of publication. Research towards the dissertation typically forms the major part of the work required for the Ph.D. in Mathematics. *External examiner requirement:* the Department Chairperson will select an external examiner from a list provided by the Dissertation Advisor; the examiner should be both expert in the field, and familiar with the standard expected for a Ph.D. A copy of the dissertation must be sent to the external examiner for review at least four weeks in advance of the Final Oral Examination. The reviewer's report shall be circulated among the Doctoral Committee before the final oral examination. *Alternatively referees' reports* on papers based on the dissertation and accepted for publication may be accepted in lieu of the external examiner requirement.

Progress Evaluation Each Spring Semester after admission to candidacy, the candidate shall give an oral presentation to the Doctoral Committee of the problem(s) under investigation. The presentation may also include a discussion of partial results. The Dissertation Advisor shall submit to the Department Chairperson a written report of the presentation.

Ph.D. Requirements (Statistics Option)

The requirements are the same as for the Pure and Applied Mathematics Option, except that the student must pass the Core Qualifying Exams in Analysis and Mathematical Statistics; alternatively the student may take an exam based on the Probability Elective Sequence in place of the Analysis Core Qualifying Exam.

Modern Languages and Linguistics (FRE/SPA/ESL/LIN)

French and Spanish

Admission Requirements SEE PAGES 13-16. Students may apply for admission into the Spanish and French M.A. programs during any academic term and not be limited to the Fall semester. Students who do not have an undergraduate major in

French or in Spanish may be required to take additional undergraduate courses before being admitted to the M.A. program. All applications must be approved by the Division of Modern Languages and Linguistics.

Requirements for the M.A. Degree

1. Reading proficiency in a second foreign language.
2. Satisfactory completion of a written comprehensive examination on French language and literature, or Spanish and Spanish-American language and literature, based on, but not restricted to, a reading list.
3. A thesis written under the direction of a director and two additional readers.
4. Course work following one of the plans listed below:

Plan A 27 hours in one language, plus 6 hours of FRE 6971 or SPW 6971 (thesis).

Plan B 27 hours, consisting of 18-21 hours of course work in one language, plus 6-9 hours in a second language or in another department (the courses to be approved in advance by the Director of the Division of Modern Languages and Linguistics), plus 6 hours of FRE 6971 or SPW 6971 (thesis).

Plan C The Division of Modern Languages and Linguistics also offers a non-thesis track consisting of 36 hours. Consult the Director of Graduate Studies in the DMLL for specific information on this option.

Special Summer Programs Overseas

The Division of Modern Languages and Linguistics, in cooperation with the International Affairs Center, offers several summer study programs overseas. These include study in France, Spain, Italy, and Costa Rica. For complete details, contact the program advisers or the International Affairs Center.

Linguistics

Linguistics is primarily an upper-level and graduate discipline with strong interdisciplinary concerns.

Requirements for the M.A. Degree Students interested in graduate study in Linguistics are urged to acquire a language background in their undergraduate programs, regardless of their major field of study. The minor in Linguistics also is recommended; undergraduate course work equivalent to the material covered in LIN 3010 is strongly recommended.

Admission Requirements SEE PAGES 13-16. The Linguistics Program offers two graduate tracks: The Master of Arts in Linguistics (thesis), and The Master of Arts in Applied Linguistics (Teaching English as a Second Language; non-thesis).

Special requirements

1. A minimum of 1000 on the Aptitude portion of the GRE test; the verbal requirement may be waived for non-English speaking applicants.
2. A "B" average (3.0) on all upper level undergraduate work.
3. Foreign students must score 560 on the TOEFL and 230 on the TSE or SPEAK.
4. Students meeting all requirements, but who have not taken the GRE at the time of application, may enroll in courses as a special student pending receipt of acceptable scores.

Requirements for the M.A. Degree in Linguistics (Thesis)

I. Core Requirements (15 hours)

LIN 6081 (3)	LIN 6322 (3)	LIN 6380 (3)	LIN 6601 (3)
LIN 6715 (3)			

II. Additional Requirements (18 hours)

12 hours of approved electives.

A thesis and 6 hours of thesis credit.

Requirements for the M.A. Degree – Applied Linguistics (TESL) Track (non-thesis)

I. Core Requirements (33 hours)

LIN 5700 (3)	LIN 6081 (3)	LIN 6351 (3)	LIN 6675 (3)
LIN 6715 (3)	LIN 6720 (3)	LIN 6748 (3)	TSL 5371 (3)
TSL 5372 (3)	TSL 5471 (3)	TSL 5525 (3)	

II. Additional Requirements 6 hours of internship through enrollment in TSL 6945. A written and oral comprehensive examination is required for all M.A. degree tracks in the program, as is demonstration of proficiency in a language other than the student's native tongue.

Philosophy (PHI)

Admission Requirements SEE PAGES 13-16.

Special requirements An undergraduate major in Philosophy. All applicants must submit writing samples. Credit toward the M.A. from another department or university can be considered for credit.

Requirements for the M.A. In Philosophy

1. Reading knowledge of a foreign language approved by the student's adviser.
2. 30 hours, including 21 hours of classroom instruction.
3. A written or oral comprehensive examination. This may be waived depending on the performance of a student.
4. A thesis, written under the direction of an adviser assigned by the Graduate Coordinator, and approved by a supervisory committee after an oral defense has been made.

The Ph.D. Degree The Ph.D. degree in Philosophy is a research degree presupposing considerable knowledge of the main branches of the discipline besides a capacity for independent and critical thinking.

Admission Requirements

1. A B.A. degree or M.A. degree from an accredited institution.
- 2a. A composite GRE score (V and Q) of 1100 and a GPA of 3.5 for both B.A. candidates and candidates with previous graduate study

-OR-

- 2b. Demonstrated ability in graduate level course work in philosophy.
3. Three letters of recommendation.
4. A writing sample of approximately 20 pages or a copy of the M.A. Thesis.
5. Approval of the Graduate Committee.

Credit Hour Requirements

To obtain the degree of Ph.D., students starting with only a B.A. must complete 90 credit hours. The first 30 hours may consist entirely of course work or a combination of course work and up to a maximum of 6 hours for thesis work. A maximum of 6 of the course work hours may be taken in courses from other departments in the university, provided the courses are approved by the Graduate Committee of the department.

Of the remaining 60 hours up to 24 but no less than 12 may be applied to the Ph.D. dissertation and up to 9 to independent study and/or directed research, if so desired. Again, a maximum of 6 credit hours may be taken from another department in the university, provided the courses concerned are approved by the Graduate Committee.

A student starting with an M.A. must complete 60 credit hours. These must be made up in the same way as prescribed in the previous paragraph for the 60 hours remaining for students starting with a B.A.

Logic Requirement Within two years of being admitted to the Ph.D. program every student is expected to have passed a course in symbolic logic with at least a grade of B.

Qualifying Comprehensives Students can begin taking the Qualifying Comprehensives as early as they wish. Upon passing the qualifying comprehensive examination and completing 30 hours of course work, the student will be awarded the M.A. degree. However, they will have taken each of the comprehensive examinations at least once within three years of being admitted into the Ph.D. program.

The Comprehensive Examinations will be in the following subjects:

1. History and Metaphysics (A two-day examination covering Ancient, Medieval, Modern, Recent and Contemporary Philosophy and Metaphysics)
2. Epistemology/Philosophy of Science (One-day examination)

3. Value Theory (A one-day examination in Ethics, Aesthetics and Political Philosophy)

To pass any of these examinations, a student must obtain at least a grade of B+. A "B" average on a given exam is not sufficient to pass the exam. Instead, students must pass each section of the exam with a minimum grade of B and an overall average of B+ at the completion of the comprehensives to remain in the Ph.D. program. Students obtaining a B+ average or better will be awarded an M.A. Students who fail any given examination must take it again on the next occasion. They must pass in the second attempt to continue in the program.

The Foreign Language Requirement As tools of research, every student must pass an examination in two foreign languages including at least one modern language. ("Modern Language" here refers to French and German or a substitute approved by the Graduate Committee.) A student taking an ancient language for the second requirement will have a choice of Greek or Latin or an approved substitute.

The Dissertation A dissertation is mandatory for the Ph.D. in Philosophy. A student who has completed the Comprehensives and has fulfilled the language and logic requirements will be eligible to submit a detailed written dissertation prospectus and defend it orally. The proposal must be approved by the dissertation committee. Award of the degree will follow upon the successful defense of the completed dissertation.

Physics (PHY/PHZ)

Program Description The Department of Physics offers programs leading to a Master of Science degree. Both thesis and non-thesis programs are available.

Qualified graduate students with appropriate backgrounds may obtain a Ph.D. in Engineering Science, under an interdisciplinary arrangement between the Department of Physics and the College of Engineering. Similar arrangements may be considered with other disciplines. Students should consult with the Physics Graduate Adviser for details.

Thesis research areas include solid state physics, materials science, semiconductor physics, applied physics, atomic-molecular physics, quantum electronics and laser physics, theoretical physics, and medical applications of physics. Supporting facilities include computers, from departmental PCs to the University's main-frame, as well as machine, electronics, and glass-blowing shops.

Special Admission requirements for M.S. Program

1. The general requirements for Admission to Graduate Study described in pages 13-16 are applicable.
2. Applicants must have a good undergraduate background in Physics, usually requiring a bachelor's degree in Physics or in related fields such as Engineering, Mathematics, Chemistry, or similar disciplines.
3. Three letters of recommendation or reference commenting on an applicant's background and potential to pursue a graduate program in Physics/Applied Physics are required.
4. Applicants must submit a page in the form of statements outlining their research interests and objectives relating to the program.

Requirements for the M.S. Degree SEE PAGES 13-16 for university requirements

1. When a student is admitted to the graduate program in Physics, the student will consult with the Physics Graduate Adviser, who will be the student's course adviser and monitor the progress of the work. After a decision has been made concerning the student's academic goals, the duties of the graduate adviser will be assumed by the major professor and the supervisory committee appointed by the department chairperson. In keeping with the student's academic goals, the supervisory committee will determine the appropriate course of study and examinations required for graduation for both the thesis and non-thesis options.
2. The student desiring the M.S. degree with a thesis is required to take a minimum of 30 credits, no more than 6 of which may be for PHY 6911, PHY 6935, and PHY 6971. Of these 30 credits, 16 must be in physics courses numbered 6000 or above.

3. The student desiring the M.S. degree without a thesis is required to take a minimum of 30 credits, no more than two of which may be for PHY 6911 and PHY 6935. Of these 30 credits, 16 must be in physics courses numbered 6000 or above.
4. The student for the M.S. degree with a thesis must present a thesis acceptable to the supervisory committee covering research work amounting to a minimum of 6 units of credit in PHY 6971.
5. The student for the M.S. degree without a thesis must pass a comprehensive examination set by the supervisory committee.

Special Admission Requirements for Ph.D. Program Since this is an interdisciplinary program offered in the College of Engineering, the admission requirements for the Ph.D. program will be the same as for the Ph.D. in Engineering Science in that College (PAGE 131).

Requirements for the Ph.D. Degree Because of the nature of the interdisciplinary program, the requirements for the degree will be the same as for the Ph.D. in Engineering Science in the College of Engineering. (PAGE 131).

Political Science (POL)

The graduate program leading to the M.A. in Political Science is designed to offer advanced general instruction in Political Science. It prepares its graduates for positions of responsibility in the public and private sectors, as well as in research, teaching, and study at the doctoral level.

Admission Requirements Students seeking admission to the M.A. program in Political Science must satisfy all general University admissions requirements. SEE PAGES 13-16. They also must satisfy the following:

1. Submit 3 letters of recommendation from individuals familiar with their academic and intellectual abilities. These letters must show that the student has the potential to do satisfactory graduate level work in Political Science. These letters should address the student's writing and speaking abilities, quantitative skills, and capacity for analytic thinking.
2. Students must have a good undergraduate background in Political Science, usually requiring a bachelor's degree in Political Science or in a related field. Students with less background in Political Science may be required to take additional courses in Political Science prior to admission. These courses will be specified by the Graduate Program Coordinator in consultation with the department admissions committee; the student must earn a grade of "B" or better in each of these courses.

Course Requirements For instructional purposes, the graduate curriculum in Political Science has been divided into seven fields:

Field 1 Political Theory

POS 5736 (3)	POS 6247 (3)	POS 6706 (3)	POT 5626 (3)
POT 6007 (3)			

Field 2 Comparative Government and Politics

CPO 5934 (3)	CPO 6036 (3)	CPO 6091 (3)	
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Field 3 International Relations

INR 5086 (3)	INR 6007 (3)	INR 6036 (3)	INR 6107 (3)
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Field 4 American National and State Government

POS 5094 (3)	POS 6045 (3)	POS 6095 (3)	POS 6127 (3)
POS 6415 (3)	POS 6427 (3)	POS 6455 (3)	

Field 5 Urban Government and Politics

POS 5155 (3)	POS 6157 (3)	URP 6056 (3)	
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Field 6 Public Policy

INR 6107 (3)	POS 6095 (3)	POS 6157 (3)	PUP 5607 (3)
PUP 6007 (3)	URP 6056 (3)		

Field 7 Law and Politics

POS 6607 (3)	POS 6698 (3)	POT 5626 (3)	
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The following non-field courses may be used as elective hours:

POS 6909 (1-3) POS 6919 (var) POS 6933 (3)

Degree Requirements A minimum of 36 hours of graduate level course work distributed according to the following five categories:

1. Required core (9 hours): POS 5736 (3), plus two of the following, which will determine the student's major and minor fields of study.
CPO 6091 (3) INR 6007 (3) POS 6045 (3) POS 6157 (3)
POS 6698 (3) POT 6007 (3) PUP 6007 (3)
2. Major field (9): 3 courses in the student's major field of study.
3. Minor field (6): 2 courses in the student's minor field of study.
4. Electives (Minimum 6 hours). Must be approved in advance by the Graduate Program Coordinator.
5. Thesis: Minimum of 3 credits (POS 6971).
6. Remaining hours are to be taken as thesis (maximum of 6 hours), electives, or in the major or minor field.

Students who choose Public Policy as their major field can structure their electives around specific Policy Areas (e.g., education, health, urban, social sciences, law enforcement) by consulting with the Graduate Program Coordinator.

Details of these minimal requirements follow

1. **Required Core Courses** Students must take POS 5736 (Political Research Methods) within the first calendar year of graduate study. Also, the student must choose at least 2 of the following:
CPO 6091 (3) INR 6007 (3) POS 6045 (3) POS 6157 (3)
POS 6698 (3) POT 6007 (3) PUP 6007 (3)
All required core courses should be taken as early as possible in the student's M.A. degree program.
2. **Thesis** All students must write a thesis under the direction of a thesis adviser and a thesis committee approved by the Graduate Program Coordinator. A thesis proposal must be approved by the thesis adviser and Graduate Program Coordinator and made a part of the student's permanent file at the time the topic is approved. Substantive changes in the proposal must be approved by the thesis adviser and the Graduate Program Coordinator and added to the student's permanent file as an addendum to the original proposal. The completed thesis must be defended at a formal oral defense before the thesis committee.
3. **Comprehensive Examination** Each student must pass a written comprehensive examination covering the fields in which they have concentrated their studies. These examinations must be taken before completion of the thesis and thesis defense.

During the first semester in the M.A. program, each student must develop a written plan of study in consultation with the Graduate Program Coordinator. The plan should specify how the student intends to satisfy degree requirements. A copy of the approved plan must be filed with the department. Periodic changes and updates, as necessary, may be made with the approval of the Graduate Program Coordinator. Students are responsible for initiating changes and keeping their plans of study up to date.

Certificate in Political Science Some students may choose to pursue a certificate program rather than the degree program. The admissions and student evaluation standards are the same as for those students in the degree program. The program offers a certificate program of 20 credits in the Policy and Strategic Studies concentration. Nine of these credits must come from the following required courses:

CPO 6036 INR 6107 POS 5736 POS 6933

MacDill Air Force Base Program Responding to the specific career needs of military personnel stationed at MacDill Air Force Base, USF has developed a special Military and Strategic Studies focus within the M.A. Degree Program in Political Science.

Students will be able to take many of the necessary courses on base during evening hours. The program draws on the expertise of the full-time faculty members in Political Science and International Studies Program.

Psychology (PSY)

The graduate faculty of the Psychology Department is divided into three broad program areas: Clinical, Experimental, and Industrial-Organizational. Each of these areas offer Ph.D. level training in areas of special expertise. Members of the graduate Clinical faculty offer course work and training in the areas of Abnormal Psychology, Neuropsychology, Developmental Psychology, Behavioral Modification, Psychotherapy, Personality, Psychological Assessment, and Community Psychology. Members of the graduate Experimental faculty provide extensive research experience in the areas of Attention, Behavioral Neuroscience, Cognitive Processes, Human Memory, Judgment and Decision Making, Perception and Vision. In addition, with faculty in Communication Sciences and Disorders, the Experimental faculty offers a specialization in Speech/Language/Hearing Sciences. Members of the graduate Industrial-Organizational faculty offer Training and Evaluation of Employees, Job Motivation and Satisfaction, Small Group Analysis, Organizational Theory, Human Factors, Organizational Change, and Evaluation.

Requirements for the M.A. Degree All students must meet University requirements (PAGE 13-16) The student must complete 30 hours of graduate Psychology courses. All students are required to complete two quantitative methods courses (PSY 6217A, 6217B). In addition, the student must complete the departmental core requirement in 4 areas (2 hours each):

EXP 6058 EXP 6608 PSB 6056 SOP 6059

and one of the following (2 hours each):

DEP 6058 PPE 6058 PSY 6056

The student must complete at least 4 of the courses listed above for the M.A. degree, and complete the fifth course during the third year of graduate study.

A research thesis, PSY 6971, is required. The student must successfully pass an oral examination covering the thesis and research courses. The Department of Psychology does not admit students seeking a terminal M.A. degree in Psychology.

In addition to the M.A. degree in Psychology, the Psychology Department and the Department of Educational Psychology in the College of Education jointly grant the M.A. degree in School Psychology (SE). (See College of Education)

Requirements for the Ph.D. Degree The Ph.D. in Psychology is offered in the fields of Clinical, General Experimental, and Industrial/Organizational Psychology. Advanced doctoral-level requirements are determined by the student and the Ph.D. committee. Assuming that the student has completed all M.A. requirements in Psychology or its equivalent, the Psychology Department requires the following in addition to the general University requirements for the Ph.D. degree:

1. The Department of Psychology requires the student to take a graduate minor. A minor program of study, composed of work done outside the student's field of concentration and including a minimum of two appropriate graduate level courses, is required by the department for admission to Ph.D. candidacy. The minor must be approved by the student's Ph.D. committee and the Department of Psychology.
2. A one-year internship in an approved clinical facility for Ph.D. students in the Clinical Psychology Program.
3. Six months of internship in approved industrial or community agencies as available for Ph.D. students in the Industrial/Organizational Psychology program.

Public Administration (PAD)

The Public Administration Program offers a multi-disciplinary course of study leading to the Master of Public Administration (M.P.A.). The M.P.A. degree is designed primarily to prepare students for successful leadership roles and management careers in the public sector. Students enrolled in the M.P.A. program pursue careers in local, state, or federal agencies of government, non-profit organizations, and special service districts. Additionally, the M.P.A. degree prepares individuals for further academic study

leading to the doctorate in Public Administration or the Ph.D. in Public Policy and Administration, as well as in a variety of other disciplines.

Those already employed in public management positions may wish to pursue the M.P.A. in order to broaden their educational backgrounds, to prepare themselves for increased job responsibilities, or to change career paths. Such in-service students currently make up the majority of the M.P.A. student body.

The Public Administration program also offers a course of study leading to a Graduate Certificate in Public Management (G.C.P.M.). This program is designed for individuals who wish to acquire knowledge of public management theory and practices, but who do not find it necessary or feasible to pursue the M.P.A. degree. Students who are admitted as regular M.P.A. degree candidates are not normally eligible for the G.C.P.M.

Admission Requirements for the M.P.A. Degree Admission to the M.P.A. program is based on an overall assessment of an applicant's potential for successfully completing the M.P.A. degree. SEE PAGES 13-16 for admission requirements.

Special requirements:

1. Two letters of recommendation, one of which should be from a faculty member familiar with the applicant's academic performance and potential.
2. The submission of a brief (one page) career statement, indicating how one's career goals and aspirations can be met by completing the M.P.A. degree.
3. A statement (if applicable) describing an applicant's current and/or past managerial work experience in the public sector. This statement is especially important for (in-service) applicants who wish to secure a waiver for the internship requirement.
4. Approval by the M.P.A. admissions committee and, if deemed necessary, an admissions interview.

Applicants who lack the background necessary for graduate study in the M.P.A. program may be accorded provisional admission and/or be required to complete additional undergraduate courses.

Requirements for the M.P.A. Degree The M.P.A. degree normally requires 2 academic years of full-time study. The required curriculum is 40-49 credits, varying according to a student's prior work experience and the "exit" option chosen. Students with appropriately documented administrative work experience commensurate with their career goals may not be required to complete an internship in a public agency. Pre-service students must complete a supervised internship in a public agency. At least 24 credit hours must be at the 6000 level. A minimum of 28 hours must be taken in formal, regularly scheduled classes. Courses at the 5000 level are accepted for credit toward the degree. Specific course requirements consist of 15 hours in the core, 6 hours of statistics/methodology, 3 hours in economics, 12 hours in a concentrated field of study, 3 hours for a problem report, and 1 hour of colloquium. A student must receive at least a "B" in each core course and for the problem report.

1. Core Courses (15 hours)

PAD 6044 (3) PAD 6060 (3) PAD 6221 (3) PAD 6307 (3)
 PAD 6417 (3)

2. Statistics/Methodology (6 hours)

PAD 5700 (3), or,
 POS 5736 (3), or SOC 6526 (3) or ANT 5937 (3) or equivalent (with Program approval), and PAD 6703 (3)

3. Public Sector Economics (3 hours)

One of the following:
 ECO 5614 (3), or ECO 6525 (3), or ECO 6506 (3)
 PHC 6430 (3), or equivalent (with Program approval).

4. Fields of Concentration (12 hours)

Each student must select one of the following fields of concentration. With the approval and consent of an adviser and the M.P.A. Director, the student may design an individualized course of study that best meets the educational need.

Three hours in each field are transferable to another field. Students can include up to 6 hours from another department/program in their concentration.

Selected courses, depending on their content, may be applicable to one or more fields of concentration. These are PAD 6907, PAD 6915, PAD 6934, and PAD 6935.

Area 1. Public Organizational Management

Students selecting this concentration must take PAD 6101, Public Organizations, and/or PAD 6105, Public Organizational Change. Additionally, each student should take 6-9 credits selected from the following options:

<u>Regulation:</u>	PAD 5605 or PAD 5612
<u>Administrative:</u>	PAD 5836 or PAD 5035
<u>Human Resource:</u>	PAD 6427 or MAN 6055
<u>Planning/Budgeting:</u>	PAD 5333 or PAD 6207
<u>Computer Use:</u>	PAD 6710 or GEB 6775

With advisor permission, any of the following courses may be substituted:

ANT 7934	CCJ 6405	CCJ 6455	COM 5123
ECO 6936	GEY 6500	INP 6065	INP 7097
MAN 6055	MAN 6061	MAN 6107	MAN 6157
MAN 6219	MAN 6409	PHC 6426	GEB 6735
POS 6045	POS 6095	POS 6127	SYO 6545
MAN 6135	SPC 6442	EGC 6934	

Area 2. Budgeting and Financial Management

Students must take PAD 6207 and PAD 6222. Additionally, 6 credits should be selected from the following courses:

ACC 5315	ACC 5451	ACC 5866	ECO 6506
ECO 6525	ECP 5614	GEB 6705	GEB 6725

Area 3. Urban Management and Planning

Students selecting this specialization must take PAD 5333 and/or PAD 5807. Additionally, 6 to 9 hours should be selected from the following courses:

ANT 6447	ECP 5614	ENV 6007	GEY 6325
POS 5155	POS 6095	POS 6157	SOC 6302
URP 6056			

Area 4. Policy Analysis

Students selecting this specialization must take PAD 6365 and/or PAD 6327. Additionally, 6 to 9 credits should be selected from the following courses:

ANT 6197	ANT 6463	CCJ 6475	CCJ 6716
GEY 6325	HSC 6115	HSC 6160	PAD 5035
PAD 5612	PAD 6037	PSY 7780	PUP 5607
PUP 6007			

5. Colloquium (1 hour)

Each student must enroll for 1 credit (S/U) colloquium requirement (PAD 6926).

6. Internship (4-6 hours)

Pre-service students are required to complete a supervised internship in a governmental or non-profit organization (PAD 6946). Internships provide students with the opportunity to gain valuable experience in the public sector, thereby enhancing the academic course of study. A 4-credit internship requires a minimum of 200 hours over at least 10 consecutive weeks; a 5-credit internship requires a minimum of 250 hours over at least 10 consecutive weeks; and a 6-credit internship requires a minimum of 300 hours over at least 10 consecutive weeks. The internship does not normally exceed a full semester in length (15 weeks). Internship credits must be earned while a student is in residence and before a student has completed regular course work requirements. Exceptions to this rule can only be made by the M.P.A. Director and must be made in advance. In-service students who have appropriate managerial/work experience commensurate with their career goals may not be required to complete an internship. Such students must submit a written statement of their work experience and career objectives for assessment by the M.P.A. faculty.

7. a. Problem Report (3 hours)

This report (PAD 6909) focuses on a significant administrative/policy problem confronting a public manager or agency. Upon completing the report, the student should have demonstrated an ability to identify a problem and a set of solutions, collect and analyze relevant data, and report/defend a recommended course of action intended to solve the problem. For in-service students, the problem selected for study should be outside the student's immediate work-related responsibilities. Moreover, this requirement should be completed at or near the end of the student's course of study. A minimum grade of "B" must be achieved on the problem report. An oral examination is also required,

OR

b. Students are required to successfully complete two additional courses (6 credit hours); and a comprehensive written examination (including an oral examination, if desired by the faculty).

8. Examination Requirements

The problem report serves as the focal point for examining the student. The student is expected to present (both verbally and in writing) his/her findings to a three-member committee and be prepared to defend them. The student also should be prepared to demonstrate competency in the core courses of study. The committee consists of at least two M.P.A. faculty and, when appropriate, a qualified person outside the M.P.A. program. The examination is normally conducted at or near the end of the student's final semester of study. Should the student fail the examination, a second examination may be taken after an additional semester of study. It is contrary to departmental policy to offer a third examination.

Directed Research/Independent Study A maximum of 6 hours of Directed Research (PAD 6915) and/or Independent Study (PAD 6907) may be earned toward the M.P.A. degree. Enrollment in these courses is limited to students who want to do work in an area in which no formal course is available or in an area in which they have already completed one or more formal courses. Students who enroll in Directed Research or Independent Study must describe their study/research plan on a form furnished by the M.P.A. program and obtain the signature of the faculty member who agrees to supervise the work and the M.P.A. Director.

Petition to Bypass Core Courses A student with significant administrative experience (5 years or more) may petition the department to bypass one or more of the core course requirements. Upon appropriate review and approval by the M.P.A. Director and the adviser, the student may substitute an appropriate PAD elective(s) for the core course(s) bypassed.

Admission Requirements for the G.C.P.M. Admission is based on an overall assessment of the applicant's educational needs and career objectives. Applicants must complete an admissions form furnished by the Public Administration program and include as part of the application a written statement describing work experience in the public sector and indicating how career objectives can be enhanced by completing the G.C.P.M.

Requirements for the G.C.P.M. A certificate is awarded upon the completion of 18 hours of study, with a 3.0 GPA achieved on all work attempted. Each student must take a minimum of 15 PAD credits in regularly scheduled courses; at least 9 hours must be core courses. Independent study, directed research, and graduate colloquium credits cannot be counted toward the certificate requirements. Three credits earned in another department/program may be applied toward the certificate, providing they are relevant to the G.C.P.M. A student enrolled in the Certificate Program must take courses from at least two different full-time Public Administration program faculty members.

Doctoral Minor in Public Administration

Students enrolled in doctoral level courses of study in other programs (e.g., Anthropology, Psychology, Education) can, with their program's approval, complete a minor in Public Administration. The Doctoral Minor Adviser in the Public Administration

program will assist the student in the design of an appropriate course of study. The Ph.D. candidate with a minimal background in public administration is advised to enroll in one or more of the following courses:

PAD 6044 PAD 6060 PAD 6221 PAD 6307 PAD 6417

Rehabilitation Counseling (REH/REF)

The mission of the M.A. program in Rehabilitation Counseling is to train counselors to rehabilitate physically, mentally, emotionally, and chemically disabled people. Training emphasizes the psychological, social, medical, and vocational aspects of disability, as well as the development and refinement of personal adjustment counseling skills. Graduates with this M.A. are prepared for careers as both rehabilitation specialists and mental health counselors.

The Department of Rehabilitation Counseling offers only the M.A. degree. Most students are admitted after earning a baccalaureate degree in one of the behavioral, social, health-related, or educational disciplines (REH). A Five-Year Program (REF) is available to selected undergraduates who should contact the department during their sophomore year.

The graduate program in Rehabilitation Counseling is fully accredited by the Council of Rehabilitation Education (CORE). Upon completion of the program, graduates are eligible to sit for the national examination to become a Certified Rehabilitation Counselor (CRC). With additional course work and 3 years' experience, graduates are also eligible to take the examination for state licensure as a Mental Health Counselor.

Requirements for the M.A. Degree All students applying to the Department of Rehabilitation Counseling (REH or REF) must meet the deadlines below. New students are accepted for fall and spring semesters only. The deadline for applying for admission for fall semester is March 30, and for spring semester October 15. Three letters of recommendation and a personal interview also are required. All admitted students must have completed an acceptable undergraduate social science introductory statistics course or equivalent, or must complete such a course during the first semester after acceptance.

Students applying via the Post-Baccalaureate Program (REH) must meet the University admission requirements. SEE PAGES 13-16.

Students admitted through the Five-Year Program (REF) must have completed 90 hours of work and have satisfied General Distribution, CLAST, and Rule 6A-10.30 (Gordon Rule) requirements. Minimum admission requirements include a combined (Verbal and Quantitative) score of at least 1000 on the GRE, or a "B" average on all work beyond 60 hours. Five-year program students may earn a baccalaureate degree in another major under the conditions specified in the Undergraduate Catalog.

The Department of Rehabilitation Counseling offers both a thesis and a non-thesis program. There is no language requirement; however, a comprehensive examination is required of all students.

The following 44-hour core curriculum is consistent with national certification standards for rehabilitation counselors and must be taken by all students (post-baccalaureate, five-year, thesis, and non-thesis).

EGC 5065 (4)	EGC 5850 (1)	EGC 6494 (3)	EGC 5376 (4)
EGC 6205 (4)	EGC 6727 (4)	EGC 5493 (3)	EGC 6375 (4)
EGC 6767 (4)	EGC 5725 (4)	EGC 6468 (4)	EGC 6851 (1)
EGC 6885 (4)			

Additional Requirements for Graduation – Non-thesis program: Students in the non-thesis program must complete a minimum of 60 hours in the Post-Baccalaureate Program (REH) and 150 hours in the Five-Year Program (REF). Electives may be taken from Rehabilitation Counseling offerings or from offerings outside the department with the consent of an adviser.

Thesis Program Students in the thesis program must complete a minimum of 47 hours in the Post-Baccalaureate Program (44-hour core curriculum plus 3 hours of EGC 6971), and no less than 150 hours in the Five-Year Program (including 44-hour core curriculum plus 3 hours of EGC 6971). Additional hours to complete the minimum of

150 hours for students in the Five-Year Program may be elected from other Rehabilitation Counseling offerings or from related programs with the consent of the adviser. An oral defense of the thesis is required.

Religious Studies (REL)

In Religious Studies, students are afforded the opportunity to study the phenomenon of religion in all its diversity. Students are asked to explore, through a variety of methodologies, the meanings and values attributed to life by the world's religions and to understand the mutual interaction between religions and cultures in a variety of social and historical contexts.

The M.A. degree in Religious Studies is designed to provide graduate education to public and junior college teachers, counselors, community workers and clergy. It also is open to persons who have no professional aim, but who wish to enlarge their personal and/or professional horizons. This degree also is of use to those who plan to pursue a Ph.D. in Religious Studies or related areas. A special program in religion and public policy may be of particular interest to those who are planning careers in the church and society, journalism, or government, as well as college teaching.

Admission Requirements SEE PAGES 13-16.

Special requirement A minimum of 600 on the GRE verbal section. Any undergraduate major is acceptable, but applicants judged weak in Religious Studies may be required to make up deficiencies for no graduate credit.

Requirements for the M.A. Degree Candidates will take 39 hours in Religious Studies, including four core seminars, a colloquium series, a thesis and approved courses from other departments.

All candidates are required to take a core of four seminars (REL 6035: ProSeminar in Theory and Method; REL 6318: Religion and Culture of the East; REL 6325: Religion and Culture of the West; and REL 6196: Religion and Modernization), for a total of 12 hours. Also required is 3 hours of participation in the departmental Colloquium (REL 6921, 1 hour per semester) and 6 hours of REL 6971: Thesis. The remaining 18 hours may be taken in elective courses approved by the Graduate Director. Students deemed to have insufficient background in the academic study of religion will be required to take as a prerequisite to graduate study REL 4939: Development of Religious Studies.

Students opting for the special program in religion and public policy will be required to take three tutorials (REL 6175: Religion, Ethics and Public Policy; REL 6347: Buddhism and Politics in Contemporary Asia; and REL 6126: Religion in America, 3 hours each) out of these remaining 18 credits. They also will be required to take a political science seminar on public policy (PUP 6007) and at least two other courses in related areas of the social sciences, philosophy or religious studies as approved by the Graduate Director.

Students nearing completion of coursework, will request a member of the Department to serve as Major Professor, following which a Thesis Committee will be appointed. The comprehensive examination for the master's degree in Religious Studies will be based on the core and the electives that form the candidate's thesis, then such competency must be demonstrated. A Departmental conference on the thesis is required.

Social Work (SOW)

Master of Social Work (M.S.W.) Degree The School of Social Work offers a program leading to a Master of Social Work (M.S.W.) degree. The program is fully accredited by the Council on Social Work Education, the national accrediting body for social work education programs. Dual-degree programs are available with Public Health and Gerontology.

The primary objective of the program is preparation of the graduate for professional social work practice through acquisition of specialized knowledge and skills necessary for clinical practice with individuals, families, and groups. The secondary objectives of the M.S.W. program are: 1) to prepare students academically for pursuit of doctoral education in social work or related human service disciplines or professions; 2) to

contribute to the needed supply of professionally educated clinical social workers in the Tampa Bay area, the state, the region, and the nation.

The M.S.W. program offers a specialized course of study in direct clinical practice. The program offers students a core curriculum, plus electives, and a supervised field experience designed to produce professionals with individual, family, and group practice skills.

The M.S.W. program is designed to produce specific competencies for clinical practice. Graduates of the M.S.W. program should demonstrate: 1) practice competency in relationship skills; 2) knowledge of the interrelationships in the biological, psychological, and sociocultural factors in human life, including the impact of disease, injury, and emotional distress and their implications for social work practice; 3) skill in methods of scientific inquiry for the purpose of advancing professional knowledge and skill; 4) basic skill in the application of a range of social work treatment methodologies for the purpose of differential diagnosis and intervention; 5) practice competency in applying a psychosocial approach to the assessment of human problems; 6) practice competency in applying a psychosocial approach to treatment of human problems through individual, family, and group modalities; 7) a basic knowledge of managerial processes in social services, including program planning, personnel management, finance, and evaluation. The M.S.W. program places great emphasis on standards of professional behavior and ethics in the practice of social work.

Students admitted to the M.S.W. program must maintain a minimum GPA of 3.0, with no grade below "C" counting toward graduation. Failure to maintain the specified GPA or to exhibit responsible professional behavior may result in suspension or dismissal from the program.

Students may pursue the M.S.W. program on either a full- or part-time basis. Both programs consist of 60 semester hours of study. Separate applications and timelines exist for these programs. Students should check directly with the School of Social Work for applications and timelines. The full-time program takes four semesters to complete; the part-time program lasts for nine semesters. Students with recently earned B.S.W. degrees from programs accredited by the Council on Social Work Education may be exempt from up to 12 hours of foundation coursework, thus enabling them to graduate with 48 credit hours. Both the full- and part-time programs are heavily sequenced and students must stay in sequence. All students must obtain professional liability insurance prior to enrollment in field courses.

Admission Requirements SEE PAGES 13-16.

Special requirements

1. A completed application form to the School of Social Work and to the Graduate Admissions Office by the announced deadline
2. Previous social service related experience (minimum of one year post-undergraduate work or equivalent)
3. References from previous supervisors and faculty or advisors
4. An interview with a Social Work faculty member may be required.

Course Requirements (non-B.S.W. students)

A. Human Behavior and Social Environment Courses

SOW 6105 (3) SOW 6114 (2) SOW 6120 (5)

B. Social Work Practice Courses

SOW 6342 (3) SOW 6346 (3) SOW 6348 (2)
SOW 6362 (3) SOW 6368 (3) SOW 6375 (3)

C. Policy and Services Courses

SOW 6234 (3) SOW 6236 (3)

D. Social Work Research Courses

SOW 6405 (3) SOW 6433 (2) SOW 6435 (1) SOW 6436 (1)

E. Supervised Field Experience

SOW 6534 (4) SOW 6535 (6) SOW 6536 (4)

F. Additional Requirements: Elective hours (6)

Summary

- Foundation Courses (12 hours)
- Advanced Courses (28 hours)
- Field Courses (14 hours)
- Electives (6 hours)
- Total (60 hours)**

Course Requirements (B.S.W. students)

A. Human Behavior and Social Environment Courses

- SOW 6114 (2) SOW 6120 (5)

B. Social Work Practice Courses

- SOW 6342 (3) SOW 6348 (2) SOW 6362 (3)
- SOW 6368 (3) SOW 6375 (3)

C. Policy and Service Courses

- SOW 6236 (3)

D. Social Work Research Courses

- SOW 6433 (2) SOW 6435 (1) SOW 6436 (1)

E. Supervised Field Experience

- SOW 6534 (4) SOW 6535 (6) SOW 6536 (4)

F. Additional Requirements Elective hours (6)

Summary

- Advanced Courses (28 hours)
- Field Courses (14 hours)
- Electives (6 hours)
- Total (48 hours)**

Sociology (SOC)

The Sociology M.A. graduate program offers an emphasis in interpretive sociology, which concentrates on the meaning of human actions in everyday and historical contexts. In conjunction with the USF Communication Department, Sociology has established an Institute for Interpretive Human Studies to link social sciences and humanities. We provide a basic foundation in general sociological theory and research methods (qualitative and quantitative), and an opportunity for pursuing specialized interest in elective Sociology courses, courses in other departments, and thesis research. Many of our M.A. recipients continue in sociology Ph.D. programs. Others teach in secondary schools and junior colleges, are employed in mental health services and research, in retail sales, and government organizations, or work as research consultants and market analysts.

Admission Requirements In addition to the University's GRE and GPA requirements, applicants should submit two letters of reference from previous instructors and a sample of written work. A TOEFL score is required of all international students. The department follows the University admission date, but students who desire full consideration for financial aid should submit completed applications by April 1, for Fall admission and by October 15, for Spring admission. It is advisable for an applicant to hold a baccalaureate degree which provides background in sociological theory and research methods. Students without training in Sociology, who otherwise meet requirements for admission, may be asked to take additional undergraduate courses in Sociology prior to admission. These additional courses will be specified by the graduate director in consultation with the department graduate committee.

Students may enroll in graduate courses as Special Students without formal application to the degree program, if they obtain permission from the graduate director. Students subsequently accepted into the Graduate Program may transfer up to 12 hours taken as a non-degree seeking student toward fulfilling M.A. degree requirements.

Applications and documents should be sent to the Office of Admissions. Query letters and letters of reference should be sent to the Sociology Department. Contact the Department of Sociology for further information.

Requirements for the M.A. Degree In addition to general University requirements, a minimum of 36 hours of graduate work including a thesis must be completed. Oral

comprehensives take place during the thesis proposal defense. The thesis project is carried out under the supervision of a faculty member chosen by the student. Sometimes students use their current occupations as research settings. Six of the required hours are taken as thesis hours. Required courses include:

SYA 6126 (3) SYA 6305 (3) SYA 6405 (3) SYA 6505 (3)
SYA 6971 (6) SYA 6175 (3) or SYA 6315 (3)

Six of the additional 15 required hours must be in scheduled graduate courses in the Sociology program. The other 9 hours can be in independent study, directed research, 4000 level courses in Sociology or in approved courses in other departments.

COLLEGE OF BUSINESS ADMINISTRATION

The College of Business Administration offers the following graduate programs: Master of Business Administration, Master of Accountancy, Master of Arts in Economics, Master of Science in Management, and a Ph.D. in Business Administration.

Graduate programs are designed to:

1. Make graduate level professional education available to qualified persons who seek managerial and professional positions in business, government, or education.
2. Support the research activity so vitally necessary to maintain a quality graduate faculty and program.
3. Foster the independent, innovative thinking and action appropriate to a professional individual.

Applicants to graduate programs in the College of Business Administration should apply directly to the University Graduate Admissions Office and must meet the University requirements for admission. General inquiries should be directed to the Office of Graduate Studies, College of Business Administration, University of South Florida, Tampa, Florida 33620.

Accreditation The M.B.A., M.S. in Management and Master of Accountancy programs in the College of Business Administration are accredited by the American Assembly of Collegiate Schools of Business (AACSB). The College also is a member of the Graduate Management Admission Council (GMAC).

Admissions SEE PAGES 13-16 and specific program requirements. Admission to the graduate programs in the College of Business Administration is open to qualified men and women holding undergraduate degrees from accredited institutions in the United States or from a recognized academic institution in a foreign country. In making admission decisions, the college does not favor any particular academic discipline. While academic credit is not awarded for past work experience and is not a requisite for admission to the program, it is a meaningful background and will enable the student to understand more readily the subject matter in a curriculum. The important factors, besides the Graduate Management Admission Test (GMAT) and GPA, are the applicant's motivation in undertaking graduate work and the degree of focus in the applicant's career plans. Students are admitted into the M.B.A. Program for either the fall or spring semesters, but the fall term is the preferred entrance date for the student who requires all or approximately all of the Common Body of Knowledge courses. Ordinarily, new students will not be accepted in the M.B.A. or M.S. in Management programs for the summer term.

Application Deadline Applicants for masters' level programs in the College of Business Administration should have all necessary materials, including test scores, in the University Graduate Admissions Office by the following deadlines:

M.B.A., M.Acc, and M.S. in Management programs:

Fall Semester	May 15
Spring Semester	October 15
Summer Semester	March 13 (M.Acc only)

M.A. in Economics programs:

See Academic Calendar

Executive M.B.A. program:

Fall Semester	May 15
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Non-Degree Seeking Students The College of Business Administration will approve non-degree seeking student status only for transient students (degree-seeking students at another accredited institution) or for students with valid reasons to register in this status and who meet all admission requirements on a space available basis.

Academic Standing All master's candidates are expected to maintain a cumulative grade point average of 3.0 throughout the program. Failure to maintain the "B" average places the student on academic probation. (See Page 24.)

Contact Persons Students interested in specific programs within the College should contact the persons listed below.

Ph.D. Program Coordinators:

Accounting - Karen Hooks

Information Systems - Ellen Hufnagel

Marketing - James Stock

Finance - Scott Besley

Management - Walter Nord

Master's Program Coordinators:

M.B.A. - Carolyn Gazdak

M.A. Economics - Mark Herander

Physicians M.B.A. and Executive M.B.A. - Maryanne Rouse

M.Acc - Robert Keith

M.S. Management - Jerry Koehler

Graduate Degree Programs

Master's Degree Programs

The College of Business Administration offers graduate programs leading to the master's degree in:

* Accounting (MAcc)

* Business Administration (M.B.A.)

* Economics (M.A.)

* Management (M.S.)

Department requirements are listed under the appropriate program descriptions.

Doctoral Programs

Doctor of Philosophy In Business Administration (Ph.D.) The Ph.D. program offered by the College of Business Administration provides its graduates with high quality preparation for careers as college and university professors and as research and staff personnel in industry and government. The doctoral program provides for intellectual growth as students work closely with faculty in seminars, research projects, and other assignments which develop their teaching and research skills. The curriculum offers breadth of understanding of the integral components of business administration as well as depth of field specialization sufficient to permit the student to make a meaningful contribution to their discipline. The program is sufficiently flexible to allow each student to build upon his or her strengths and to accommodate students with various levels of preparation in a wide variety of fields. The program offers majors in the following fields: Accounting, Finance, Information Systems Management, Marketing, and Management. Support areas are offered in these fields, as well as in Economics.

Admission Requirements SEE PAGES 13-16. Admission decisions for the Ph.D. program are made by Departmental and College committees on a competitive basis. Those seeking admission to the Ph.D. program should have demonstrated high levels of success in their previous academic work and a high score on the Graduate Management Admissions Test (GMAT). GMAT scores over five years are not acceptable. The program is designed with the assumption that the student is proficient in statistics (through multiple regression), college algebra, matrix algebra, differential calculus, and a computer language (such as BASIC, FORTRAN, COBOL, Assembler). Students may apply after conferral of their Bachelor's degree although a Master's degree is preferred. The Ph.D. in Business Administration is a full time program.

All application materials must be received by the College by February 1. Decisions on admission and assistantships are usually made by the middle of March. All students are accepted to begin their program in the Fall Semester; no January admissions are permitted.

The application process begins by securing an application packet from the Doctoral Program, office of the Dean, College of Business Administration, BSN 2102; (813) 974-4281.

Program Requirements A minimum of 90 semester hours beyond the bachelor's degree is required. This includes 21 hours of dissertation. A minimum of 45 hours of coursework must be completed at the University of South Florida.

Foundation Courses These courses are designed to develop an appreciation of the institution of business and to help students see how their areas of specialization fit into this general picture. With the approval of the student's program committee, a student may satisfy these requirements in any of the following ways:

- By completing an undergraduate degree in business at an AACSB accredited institution, with an average of "B" or better in the last 60 hours, no more than 5 years prior to admission to the Ph.D. program.
- By completing an M.B.A. degree at an AACSB accredited institution, no more than 5 years prior to admission to the Ph.D. program.
- By completing 3 credit hours of graduate coursework, with a grade of "B" or better, in each of the functional areas: Accounting, Finance, Information Systems, Management, and Marketing. (Economics requirements are described under core requirements.) All graduate level courses at the 6000 level or above, with the exception of specific "tool" courses (e.g. statistics), will count toward this requirement.
- By successfully petitioning the doctoral Program Committee to accept previous academic work (e.g., specialized Masters programs in business, degrees granted more than 5 years ago, etc.) in fulfillment of all or part of this requirement.

Core Courses The core courses are designed to provide a strong background in Economics and to develop the student's quantitative and statistical research skills. These courses are required of all students in the program. The College will waive a course only if the student has passed the same or equivalent course with a grade of "B" or better within the preceding five years.

The Economics requirement can be met by completing two graduate level courses, one in microeconomic and one in macroeconomics, with a grade of "B" or better. The courses which satisfy this requirement are:

GEB 6716	Microeconomic Analysis
GEB 6717	Macroeconomic Analysis
ECO 6115	Microeconomic
ECO 6206	Aggregate Economics
ECO 6705	Advanced Managerial Economics

At least one course must be an advanced Economics course (ECO prefix). The quantitative and statistical coursework is to be determined by the student's advisory committee in consultation with the student. A 3 course series is required. An appropriate sequence should be chosen from the following:

ECO 6424	Econometrics I
ECO 6425	Econometrics II
GEB 6375	Applied Linear Statistical Models
QMB 7565	Introduction to Research Methods
QMB 7566	Applied Multivariate Statistical Methods

Other appropriate mathematics, statistical and quantitative courses may be approved by the college-wide committee. In addition, students are required to take an additional research elective approved by their advisory committee.

Should a student earn a "C" or lower in one of these courses, the case will be brought before the Doctoral Program Committee for review. After reviewing the case, the Committee will take one of the following steps:

- Require the student to pass the relevant preliminary examination. A student who fails the preliminary exam on the first attempt may retake it within one year. A student who fails the exam on the second attempt will be subject to dismissal.
- Require the student to retake the course. If a student retakes the course and fails to receive a grade of "B" or better, the student is subject to dismissal.

Major Field All students will take at least 5 courses at the 6000 or 7000 level in an area designated as the student's major. Students are encouraged to identify courses in the major field that will provide experience in applying current research techniques to problems in that field. To accomplish this, the student may propose a combination of formal classroom courses and independent directed-research courses. This combination may include a year-long research seminar in which the groundwork is laid

for the student's dissertation. The specific agenda of courses will be determined by the student's advisory committee. The following fields are offered as majors:

Accounting, Finance, Information Systems Management, Marketing and Management. Courses taken as part of the Foundation or Core sections may not be counted as part of the hours required for a major field.

Support Area The support area will consist of a minimum of three courses from one of the fields listed under the major fields, plus Economics. The support area and the major field cannot be taken in the same department. Courses within the support area can be selected to complement the major field, and, in special cases, may include courses outside the College of Business. The nature and number of the support area courses will be determined by the Student's Advisory Committee in consultation with the Ph.D. coordinator of the support area discipline department. Courses taken as part of the Foundation or Core courses may not be counted as part of the 9 hours required for support areas.

Comprehensive Examination Upon completion of all coursework, students must pass a comprehensive written examination in each of the major and support areas. The student's performance on these exams should reflect familiarity with the literature, as well as with current issues and problems related to these fields. A student who fails one or both of the field exams may retake it (or them) within one year. A second failure disqualifies the student from continuing the Ph.D. program. If the degree is not conferred within 5 calendar years of the comprehensive examination, a second different examination must be taken. Students passing the field examinations are eligible for admission to candidacy for the Ph.D. program.

Normally, field examinations will be administered in October and March of each year. A student who anticipates sitting for a field exam should notify the department chair and the Associate Dean in writing during the first week of the semester in which they plan to take the exam. The major field exams will be a minimum of 8 hours. The Associate Dean's Office will coordinate with the relevant department in scheduling and grading the exam.

Admission to Candidacy See page 28.

Dissertation See page 28.

Residency Requirement See page 27. In addition, Ph.D. students in the College are required to complete a minimum of 15 hours per calendar year. Failure to meet this requirement will result in the student being placed on conditional status.

The Master of Business Administration Degree (M.B.A.)

The Master of Business Administration (M.B.A.) is a professional degree designed to prepare graduates for managerial roles in business and not-for-profit organizations. Graduates will develop the necessary skills and problem-solving techniques that will permit them to make an early contribution to management and eventually to move into broad, general management responsibilities at the executive level. The program is designed to meet the needs of qualified men and women with undergraduate degrees from accredited universities. The College makes no distinction in the selection process between applicants with experience and those coming directly from academic life. However, experience is a meaningful background and will permit the student to better understand the subject matter to be mastered.

The faculty uses various delivery systems in the classroom: the traditional lecture/discussion, case method, simulation, model building, and laboratory techniques. These methods emphasize an analytical, conceptual, and theoretical balance throughout the program, which helps sharpen students' resourcefulness in solving complex problems and selecting optimal courses of action. Students are given many opportunities to demonstrate their writing and verbal competency and to improve interpersonal communication.

Admission Requirements These requirements are in addition to the general University requirements for admission. SEE PAGES 13-16.

1. GPA in last two years of undergraduate work of 3.0 or higher.
2. Acceptable scores on the GMAT, approximately 500 or higher. The two quantitative measures may be considered in combination when one factor is low and the other is high.
3. Interviews generally are not required, but may be desirable in some instances.
4. Foreign students: TOEFL score of 550 or higher.

Program Requirements The M.B.A. degree is a 60 hour program. The full-time student without course waivers will require 4 semesters to complete the program. Part-time students can complete all work within a reasonable time - approximately three years without course waivers. Part-time students are encouraged to take two courses per semester and must complete 12 hours per calendar year to remain on active status as a degree-seeking student. Students who have completed undergraduate or graduate courses in business and economics may receive course waivers and reduce their course loads from the maximum requirement. All M.B.A. candidates must complete all degree requirements within five years of beginning the program. Courses are scheduled to accommodate both full-time and part-time students. All courses are at the graduate level. Students entering the program are expected to have sufficient competency in mathematics (College Algebra and Elementary Calculus), communication skills (written and verbal), and basic computer skills.

The curriculum consists of:

The Common Body of Knowledge (CBK) courses, known as the "Core." These courses are designed to provide basic background in the several functional areas in order to prepare for more advanced studies. The courses assume little or no prior knowledge in the field. Students having adequate previous preparation in any of these courses, except for GEB 6895, may seek a waiver, subject to standards set by the faculty. The conditions for waivers are explained more fully below.

Other Required Courses These courses are extensions of certain core courses, adding depth and breadth.

Elective Courses Breadth is achieved within this cluster of courses, which also allows the student to develop one or more areas of concentration. "Breadth" means that the student must take at least 15 hours or equivalent of work beyond the CBK outside of the field of concentration.

Integrative Course All students are required to take GEB 6895. The course is taken in the last sequence of courses in order to permit the student to integrate the subject matter of earlier courses by studying administrative processes under conditions of uncertainty, including integrating analysis and policy determination at the overall management level.

M.B.A. Course Structure

Common Body of Knowledge Courses: (30 hours)

ACG 6025	Financial Accounting for Managers (3)
GEB 6716	Microeconomic Analysis (3)
FIN 6406	Financial Management (3)
GEB 6735	Social, Legal, and Political Environment of Business (3)
MAR 6815	Marketing Management (3)
QMB 6305	Statistics for Management (3)
QMB 6603	Quantitative Methods for Operations Management (3)
ISM 6021	Information Systems for Management (3)
MAN 6055	The Management Process (3)
GEB 6895	Business Policy and Strategy (3)

Other Required: (6 hours)

ACG 6075	Managerial Accounting and Control (3)
GEB 6717	Macroeconomic Analysis (3)

Electives: (24)

Total Hours (60)

Constraints

1. Maximum program -- 60 hours.
2. To insure breadth within the program, each student must take at least 15 hours or equivalent beyond that in the CBK and in two or more disciplines outside the field of concentration.
3. Student must take at least one course within the program in each of the academic departments, either by completing required core courses, or if waived, by completing an elective.
4. Students with an undergraduate degree in Accounting may not take ACG 6025 or ACG 6075 for credit.
5. Students may complete no more than 6 hours of Independent Study/Directed Research for degree credit.
6. A maximum of 6 hours of 5000 level courses will be allowed for degree credit.

Waiver Policy A reduction of the 60 hour program may be accomplished by waivers of the CBK courses, except for GEB 6895.

Waiver usually is based on transcript analysis if the student has completed a minimum of 6 hours (departments may require additional hours) in the basic disciplines with a grade of "B" or better from an AACSB accredited school within the last five years. The waiver of either ACG 6075 or GEB 6717 requires the substitution of another course as an elective.

International Business Students are required to take at least one international business course in their programs.

Concentrations Students may include an area of concentration in their overall graduate programs. These are available in International Business, Economics, Finance, Information Systems, Management, and Marketing. The selection of a concentration usually takes place after the student has completed the CBK. Four elective courses (12 hours) are required for a concentration.

Thesis Students may elect a 6 hour thesis in any of the areas of concentration of the college, subject to departmental approval.

Non-Tampa Campus Offerings Graduate courses as part of the M.B.A. program are offered at all USF campuses. All required CBK courses and a limited number of electives are offered at the St. Petersburg and Fort Myers campuses. Normally, only required CBK courses are scheduled at Sarasota. In order to complete the entire M.B.A. program, a candidate from Sarasota should expect to take courses on the Tampa, St. Petersburg or Fort Myers campuses. Students at St. Petersburg may want to take courses at Tampa, either to accelerate the program or to have a wider choice of electives.

M.B.A. with Concentration in International Business

Students enrolled in the M.B.A. program can elect to concentrate in International Business. The students must take a minimum of 12 hours in International Business from an approved list. Students who do not have an undergraduate degree in Business Administration with a major in a functional area should also complete a minimum of 12 hours in a functional concentration at the Master's level. The International Business concentration also requires at least one course in an approved area of study that is taught outside the College of Business and deals with international aspects of the discipline. Students must also demonstrate proficiency in a foreign language. The University will accept up to 9 hours of graduate credit from an approved foreign university.

M.B.A. with Concentration in Finance

Students seeking a graduate education with a concentration in the field of Finance should enroll in the Master of Business Administration Program. In addition to the M.B.A. core, students would choose a minimum of 12 elective hours in Finance. Topics of interest in the Finance program include corporate and managerial finance, banking and financial institutions, money and capital markets, investments, international finance,

and finance theory. A thesis can serve as part of the elective course work, but is not required.

M.B.A. with Concentration in Management Information Systems (MIS)

Students enrolled in the M.B.A. program can take a concentration in MIS. The concentration requires a minimum of 12 graduate MIS hours in addition to ISM 6021, which is a required course in the M.B.A. program. For an MIS concentration, the student must take ISM 6123, plus three approved graduate electives in MIS.

M.B.A. with Concentration in Marketing

Students seeking a master's degree with a concentration in Marketing should enroll in the M.B.A. program. A concentration in Marketing requires a minimum of 12 elective hours, in addition to the Marketing Management Foundation course.

Course topics include: marketing research, sales management, promotional management, logistics and physical distribution management, international marketing, and marketing strategy. A thesis (6 hours) can serve as part of the elective course work, but is not required. Candidates considering a Ph.D. in marketing are particularly encouraged to consider the thesis option.

The Master of Accountancy (MAcc.) Degree

The objective of the MAcc. program is to provide candidates with greater breadth and depth in accountancy than is possible in the baccalaureate program.

The Master of Accountancy program is designed to meet the increasing needs of business and government, as well as public accounting, for persons who have in-depth professional training in accounting and a background in the areas of quantitative methodology, economic analysis, management science, etc. The MAcc program may be structured to satisfy the requirements to sit for the Uniform CPA Examination in Florida.

Admission Requirements SEE PAGES 13-16.

Special requirements

1. A score of 500 or higher on the GMAT.
2. Cumulative 3.0 GPA in all work while registered as an upper division student working for a baccalaureate degree.
3. Cumulative 3.0 GPA in all upper level undergraduate accounting courses.
4. Students who do not have the equivalent of an undergraduate degree in accounting at USF may be required to take additional courses. The number deemed necessary will depend on the academic background of the individual student. Upper-level accounting courses must be completed at a four-year regionally accredited institution. Special consideration may be given to applicants who have an exceptionally high GPA or GMAT scores.

Program Requirements All students are required to complete the CBK outlined for the M.B.A. program. The academic adviser will determine the specific courses and number of hours required.

For the student who has the equivalent of an undergraduate major in accounting at USF (including 23 hours of upper level accounting coursework taken within the last 5 years), the program consists of 36 hours. A minimum of 15 hours of the program is devoted to the study of professional accounting. Another 12 hours consists of study in the related areas of financial management, economics, the social, legal, and political environment of business, and business policy. The remaining 9 hours are elected by the student in consultation with a graduate adviser. Elective courses taken in the area of accounting may not exceed 3 hours.

MAcc. students may select either a general track or a tax track in their master's program. Required accounting courses in each track are:

Accounting Courses: General Track (15 hours)

TAX 6065 Federal Tax Research, Planning, Procedure (3)

ACG 6405	Systems Theory and Quantitative Applications (3)
ACG 6875	Development of Accounting Thought (3)
ACG 6346	Management Accounting and Control (3)
ACG 6636	Contemporary Issues in Auditing (3)

Accounting Courses: Tax Track (15 hours)

ACG 6875	Development of Accounting Thought (3)
TAX 6065	Federal Tax Research, Planning, Procedure (3)
TAX 6105	Advanced Corporate Taxation (3)
TAX 6205	Advanced Partnership Taxation (3)

One of the following:

TAX 6405	Taxation of Trusts and Estates (3)
TAX 6445	Estate Planning (3)
TAX 6505	U.S. Taxation of Foreign Entities (3)

Students in either track must also take the following:

Business Courses (12 hours)

GEB 6735	Social, Legal, and Political Environment of Business (3)
ECO 6205	Macroeconomic Theory and Policy (3)
GEB 6895	Business Policy and Strategy (3)

One of the following:

FIN 6246	Advanced Money and Capital Markets (3)
FIN 6445	Financial Policy (3)
FIN 6816	Investments (3)

Electives (9 hours)

Two elective courses must be outside the field of accountancy

Total Hours (36)

The Executive M.B.A.

The Executive M.B.A. is a 20-month, 60 hour accredited program designed to meet the unique needs of both mid-career managers, who have demonstrated the potential to reach senior management positions, and senior managers, who desire to increase significantly their personal and organizational effectiveness. The program provides an opportunity to broaden and enrich management skills, to extend knowledge of modern business techniques, and to further develop understanding of the social, political, and economic forces that shape the business environment and influence decision making.

Because managerial effectiveness in today's and tomorrow's dynamic, rapidly changing business environment requires more than excellent technical skills, the Executive M.B.A. is structured as an integrative program that will enhance the participant's ability to think across functional lines and to better understand the whole enterprise in a competitive situation.

Each semester begins with a three-day residency session; thereafter, classes are scheduled on alternate Fridays and Saturdays. The one-day-a-week format allows the participants to continue carrying full job responsibilities while they master a broad range of managerial skills.

The program leads to the M.B.A. and consists of the following segments:

Managerial Decision Analysis	Legal Environment of Business
Financial Accounting	Organizational Assessment and Design
Managerial Accounting	Management Information Systems
Management Process	Quantitative Methods for Managers
Taxation for Managers	Macroeconomic Analysis for Managers
Operational Marketing	Financial Management
Marketing Decision Making	Microeconomic Analysis for Managers
Decision Support Tools	Financial Management II
International Business	Business Problems Analysis
Business Policy and Strategy	Advanced Corporate Finance
Bargaining Behavior and the Management of Conflict	
Administration of Human Resource Systems	
Research Methods	

During the interim summer session, each participant, in consultation with a faculty advisor, undertakes an applied research project that focuses on a work-related problem or opportunity of his/her interest.

In addition, Executive M.B.A. students have the opportunity to participate in the annual two-week Overseas Study Module, which involves on-site study of international business practices. A different country/region is selected each year. Past modules have included visits to such cities as Moscow, London, Zurich, Geneva, Brussels, Tokyo, and Beijing.

Admission Requirements Applicants are considered for admission on the basis of individual applications and interviews. Each applicant must be nominated for the program by his or her employer. Applicants usually have 8 or more years of organizational experience, including several years in a management or senior professional position. A bachelor's degree from an accredited institution is required for admission. Candidates are required to take the GMAT. For further information, please call the Office of Executive Programs, (813) 974-4876.

M.B.A. Program for Physicians

The M.B.A. Program for Physicians is a 21 month, 60 semester-hour, accredited program designed to meet the unique needs and demanding schedules of physicians who want to gain the business and management skills necessary to significantly increase their personal and organizational effectiveness. The program provides an opportunity for physicians to broaden and enrich their leadership skills; to extend their knowledge of modern business techniques; and to further their understanding of the social, political, and economic forces that shape the rapidly changing health care environment.

Because managerial effectiveness in an increasingly competitive yet highly regulated health care industry will require more than excellent clinical skills, the M.B.A. Program for Physicians is structured to enhance each participant's ability to think across functional lines and to apply analytical/business decision techniques to health care management.

The two-week resident sessions at the beginning of each trimester are designed to introduce the range of topics to be covered during the trimester and to provide concentrated instruction. Although formal classes meet from 8:00 a.m. to 5:30 p.m., computer labs and tutoring sessions as well as group work sessions meet most evenings from 7:00 to 9:30 p.m. During the balance of the 21-month program, program participants are expected to devote at least 15 hours per week to course readings, case studies, problem sets and written assignments. Enhanced communication and learning assistance are provided via electronic mail and teleconferencing. (All program participants are expected to have access to an IBM-compatible computer and modem either at their work sites or their homes. A specially-designed course, "Decision Support Tools," is scheduled during the first resident session to insure that all participants are comfortable with the basics of using personal computers and computer-based communication systems.)

The program leads to the academic degree of Master of Business Administration (M.B.A.) and consists of the following segments:

Decision Support Tools	Managerial Accounting
Management Process	Taxation for Managers
Managerial Decision Analysis	Service Operations Management
Microeconomic Analysis for Managers	Management of Professionals
Strategic Planning	Financial Management I
Operational Marketing	Marketing Strategies
Financial Accounting	Financial Management II
Macroeconomic Analysis	Management of Information Systems
Total Quality Management	
Administration of Human Resource Systems	
Risk Management/Legal Environment of Business	

Management of Conflict and Bargaining Behavior

In addition, program participants complete an Executive Preceptorship or independent research project. The preceptorship provides the opportunity for M.B.A. candidates to work in a "mini-residency" at an approved site under the tutelage of an experienced physician-executive. The Independent Research Project allows the physician to focus on a health care management opportunity or problem of his/her interest. This innovative program feature emphasizes hands-on learning and the application of skills gained in the program to each participant's special area of interest in health care management.

Admission Requirements The program is designed to meet the professional development needs of physicians who have assumed major administrative responsibilities within their own clinical areas or who want to make career transitions from clinical practice to management. Accordingly, all participants are licensed physicians (M.D. or D.O.) with at least six years of post-graduate clinical experience. Two or more years of management experience is preferred but not required. Admission is on a competitive basis for the limited number of spaces available. There is no entrance examination required for physicians who are licensed to practice in the United States. Applicants may be contacted for a personal or telephone interview.

The Master of Arts (M.A.) Degree in Economics

The M.A. in economics prepares students for careers as professional economists in business and government. It is also excellent preparation for continued graduate study in economics.

Admission Requirements SEE PAGES 13-16.

Special requirements

1. 1000 on the GRE or 500 on the GMAT.
2. Strong motivation, aptitude, and basic intellectual ability are needed for success in graduate study in economics. An undergraduate major in economics is not required. Students with strong background in intermediate economic theory and basic mathematics and statistics can normally complete the program in one year. Students without such background may need to complete prerequisite courses in addition to the required 30 hours.

Program Requirements All students are required to take courses in advanced economic theory and econometrics. Students preparing for professional careers choose additional applied courses in industrial organization, international economics, natural and human resources, and urban and public economics. Students preparing for doctoral studies select from these and additional courses in economic theory, mathematics, and quantitative methods. Where appropriate students may select courses in other departments in the University.

Students must satisfy all University requirements for the M.A. degree. Departmental requirements include 30 hours of graduate credit selected with the approval of the department's graduate advisor. At least 24 hours must be in Economics not including Independent Study (ECO 6906) and Directed Research (ECO 6917).

Required Courses:

ECO 6115	Microeconomics (3)
ECO 6206	Aggregate Economics (3)
ECO 6424	Econometrics I (3)
ECO 6425	Econometrics II (3)

To graduate a student must have an overall 3.0 GPA, and a 3.0 GPA for all Economics courses. Before being cleared for graduation, the student must satisfactorily complete a comprehensive examination.

The Master of Science (M.S.) Degree in Management

The M.S. Program in Management has been designed to help the student develop the technical, behavioral, and leadership skills that will be needed to pursue successfully a management career in the contemporary business-world. To this end, the program has been created to provide students with the knowledge and opportunity

to develop and/or sharpen their skills in: (1) critical thinking and decision-making; (2) strategic planning; (3) human resource management and development; (4) oral and written communication; and (5) interpersonal relations. These five managerial "competencies" will be emphasized through a wide range of traditional and innovative pedagogical procedures, including classroom lectures, readings, case studies, behavioral laboratories, research projects, and a thesis.

The primary reason for entering this program is a specific interest in the management area of business, either public or private sector, national or international. This does not mean that the applicant must come from a business (or business school) background - although business experience and/or an undergraduate degree in the field can facilitate understanding of the subject matter to be mastered. In fact, the program has been created to be relevant for applicants with a wide range of undergraduate degrees (including business, engineering, liberal arts, sciences, humanities, etc.). The course curriculum has been structured to meet the needs of three types of advanced degree-seeking students:

1. Individuals who aspire to managerial careers, but seek post-baccalaureate education before entering the job market;
2. Individuals who are already practicing managers, who desire graduate training to enhance their job performance and/or further their career goals;
3. Individuals who are contemplating an academic and/or research career in management and would like to utilize the M.S. Degree as an opportunity to improve their investigative skills and/or foundation for a Ph.D. in the discipline.

All interested students should contact the M.S. Management Office, Department of Management, College of Business Administration, University of South Florida, Tampa, FL 33620, or phone (813) 974-4155, for additional information.

Admission Requirements SEE PAGES 13-16.

Special requirements

1. The Admission Committee may require a personal interview.
2. Approximately 500 or higher on the GMAT.

Program Requirements The M.S. in Management curriculum requires 54 hours which include CBK courses, advanced management courses and a thesis. Any recent coursework that would permit a waiver will be determined by an advisor upon admission to the program.

A student should complete the thesis during the final semesters under the supervision of a faculty advisor. The thesis offers the student the opportunity to further develop research and problem solving skills in the exploration of a single topic of particular interest. When completing their thesis, students will usually be involved in extensive library research, interviews with the persons in organizations directly involved in the area of activity under study, and careful assembly of a data base suitable for computer analysis.

Students are required to complete the program within five years from the beginning of coursework. Students are encouraged to complete at least 6 hours each term.

The program of studies normally includes the following courses:

M.S. In Management Course Structure

Common Body of Knowledge Courses: (27 hours)

ACG 6025 (3)	GEB 6716 (3)	FIN 6406 (3)	GEB 6735 (3)
MAR 6815 (3)	QMB 6305 (3)	QMB 6603 (3)	ISM 6021 (3)
GEB 6895 (3)			

Management Courses: (27)

MAN 6204 (3)	MAN 6219 (3)
MAN 6930 Selected Topics: Management Applications I (3)	
MAN 6930 Selected Topics: Management Applications II (3)	
MAN 6930 Selected Topics: Organizational Behavior (3)	
MAN 6930 Selected Topics: Organization and Management Studies (3)	
MAN 6930 Selected Topics: Seminar in Research Design (3)	
MAN 6971 Thesis: Master's (6)	

Total Hours (54)

Financial Aid Applicants may apply for various forms of financial aid. Awards are made to exceptionally well qualified individuals. These awards are:

1. University Fellowships -- Awarded on the basis of outstanding academic credentials. To be considered for fellowships, students must submit all application materials no later than March 1.
2. Loans -- Apply to the University Financial Aid Office.
3. Other Financial Aids -- Apply to the Director of Graduate Studies, College of Business Administration, for a) graduate assistantships, b) scholarships (apply by April 1 for the following academic year)

Organizations and Centers

The Center for International Business is designed to create a coordinated, systematic approach to study and to foster enhanced international business activity in Florida, and, in particular, in the Tampa Bay area. The Center for International Business is committed to the following goals: (a) facilitate and unify efforts of public and private organizations concerned with international business in Florida and establish a vital link between the Tampa Bay business community and the international business program of the USF College of Business Administration; (b) engage in research in the field of international business; (c) create a greater awareness of the international business strategy for Florida and the Tampa Bay area; (d) promote and provide high-quality education in international business and develop international business career services for students.

The Management Institute provides the College of Business Administration with a vehicle for making available to the community special services that could not be provided through the traditional academic program. In return for these services, the college receives the benefit of having real world applications available to its faculty and students.

The Institute houses Centers designed to provide teaching, research, information, and service to the public and private sector communities served by the University.

The common objective of these centers is to facilitate two-way communication between the University and the business/governmental communities, with the goal of sharing knowledge and solving problems.

The Small Business Development Center offers assistance in facilitating the initiation and growth of entrepreneurial forms of private enterprise. It offers workshops and individual consultation. A continued support system is provided for its clients to ensure successful implementation. Faculty members and students under faculty direction provide assistance on feasibility studies for new business organizations and for expansions of the product lines of existing firms.

The Center for Economic and Management Research helps private and public enterprises solve contemporary business and regional problems by providing a variety of material and human resources. Three primary means are used to provide this service.

First, through the publication of periodic newsletters and reports, local and statewide data are disseminated on topics including local economic indicators, such as employment figures, building activity, automobile sales, Florida tax data, and descriptions of industrial/business parks in various south and central Florida counties.

Second, through a computerized data base system, the Center's Census Data Service provides custom reports, tape copies, tape extracts and census maps from the 1980 Census of Population and Housing. A computerized system also allows Center staff to tap national data bases to conduct quick and extensive literature searches on business or non-business topics.

Third, the staff of the Center for Economic and Management Research provides Information Network, a consortium of more than 40 public and private agencies designed to disseminate economic and business data. The Network is a joint project of the College of Business Administration and the Tampa Bay Regional Planning Council which sponsors free seminars on a variety of topics throughout the year.

The Professional Development Center provides specialized credit and non-credit training and education opportunities to public and private sector decision-makers in the form of conferences, seminars, and short courses. The Center also offers custom designed in-house programs for professional groups and business organizations.

The Center for Organizational Effectiveness is the newest of the centers within the college and has been created to evaluate the productivity of individuals and organizations and to develop programs to support improvement in managerial efficiency and effectiveness.

The Center for Economic Education, which is not part of the Management Institute, is jointly sponsored by the College of Education and the College of Business Administration. Its purpose is to provide human and material resources to help school teachers and students better understand the American free enterprise system. It offers access to audio-visual and print materials, in-service training in the use of programs such as trade-offs and economic education consultants. The Center facilitates interaction between business persons, teachers, and students.

The Institute of Banking and Finance was established to promote research, training, and development of the financial services industry. The Institute promotes interaction and cooperation among the banking industry, other financial institutions, and the academic community.

The Institute for Information Systems Management (IISM) was established as a partnership between business, government and higher education. Its mission is to establish a major center for research, education and professional networking that will help firms operate effectively in the information age. Each year the Institute presents numerous seminars, workshops, and round-table discussions on important issues in Information Systems Management and conducts applied research on topics of interest to its corporate affiliates. IISM resides in the College of Business Administration and can be reached during normal business hours at (813) 974-5524.

The Graduate Business Association (GBA) is composed of graduate students in the College of Business Administration. The goals of the GBA are as follows:

1. To enhance the quality of education for graduate students.
2. To function as liaison between graduate students and the administration/faculty.
3. To provide the framework necessary for continued student involvement at the administrative level in academic affairs affecting graduate programs.
4. To facilitate career planning and placement.
5. To foster fellowship among graduate students.

Graduate students are eligible for Beta Gamma Sigma, the national business honorary society.

Further information regarding the Graduate Business Association may be obtained from the Dean's Office in the College of Business Administration.

COLLEGE OF EDUCATION

The College of Education emphasizes learning relevant to contemporary society and the development of abilities in intellectual inquiry, problem solving, and leadership. The College of Education is committed to a continuous and systematic examination of the professional program of teacher education. Its programs for the preparation of teachers represent cooperative effort in planning and practice by faculties of all academic areas.

The College is accredited by the National Council for the Accreditation of Teacher Education (NCATE).

Departments and Programs

The College of Education is organized into eight departments and one school.

- *Adult and Vocational Education
- *Childhood/Language Arts/Reading Education
- *Educational Leadership
- *Educational Measurement and Research
- *Music Education
- *School of Physical Education, Wellness, and Sports Studies
- *Psychological and Social Foundations
- *Secondary Education
- *Special Education

Each department/school has one or more programs; these are listed alphabetically and by degree level in the Department Program Descriptions section.

Graduate Degree Programs

The College is a professional school offering a variety of graduate degree programs. A major goal is to contribute to the improvement of public schooling through the preparation of teachers, administrators, specialized practitioners, and the training of researchers.

Master's Degree Program

The College of Education offers a Master of Arts and a Master of Education. The M.A. is primarily to increase competence in a teaching specialization or receive professional preparation in one of the service areas of education. Three plans of study are available, depending on the student's background and future goals.

The M.Ed. is designed for professional educators who wish to pursue graduate study in curriculum and instruction, educational administration/leadership, or measurement and evaluation.

Master of Arts (M.A.)

Admission Requirements SEE PAGES 13-16.

Special Requirements Students must meet the college-specified minimum GRE and minimum GPA.

Filing of Program During the first term all students must file a planned program of studies which is to be completed in consultation with an adviser. Three copies of the completed program should be filed with the Coordinator of Graduate Advising in the College of Education.

Quality of Work If the student's GPA falls below the minimum 3.0, the student will be placed on probation. While on probationary status, the student's academic progress will be reviewed to determine: (1) removal from probation; (2) continuation on probation; (3) drop from graduate program.

Comprehensive Examination During the last term of enrollment, students must perform satisfactorily on a comprehensive examination.

Process Core Examination Graduate students with sufficient undergraduate background may take the Process Core Examinations after consultation with their advisers. Successful performance on the examination enables students to waive the course requirement, but they must take elective courses of equal hours. The Process Core Examinations are available in Foundations of Measurement, Psychological Foundations, and Social Foundations of Education. Graduate students on a Plan II Master's Program (see below) are not eligible to take the Process Core Examinations unless they have had a comparable course at the undergraduate level.

Master's of Arts (M.A.) Programs

Program	Code	Department
Adult Education	(AAE)	Adult & Vocational
Art Education	(AAR)	Secondary Education
Behavior Disorders	(ABD)	Special Education
Business and Office	(ABE)	Adult & Vocational
Counselor Education	(AGC)	Psychological & Social Foundations
Distributive and Marketing Education	(ADE)	Adult & Vocational
Elementary Education	(AEE)	Childhood/Language Arts/Reading
English Education	(AEN)	Secondary Education
Foreign Language *	(AFE)	Secondary Education
Gifted Education	(AGI)	Special Education
Industrial-Technical	(AIT)	Adult & Vocational Education
Junior College Teaching		Educational Leadership
Biology	(BIO 90)	Business (BUS 90)
Chemistry	(CHM 90)	Economics (ECN 90)
Engineering**	(EGP 90)	English (ENG 90)
French	(FRE 90)	Geography (GPY 90)
Geology	(GLY 90)	History (HTY 90)
Mathematics	(MTH 90)	Physics (PHY 90)
Political Sci.	(POL 90)	Sociology (SOC 90)
Spanish	(SPA 90)	Speech Comm (SPE 90)
Mathematics Education	(AMA)	Secondary Education
Mental Retardation	(AMR)	Special Education
Motor Disabilities	(AMD)	Special Education
Music Education	(AMU)	Music Education
Physical Education	(APH)	Professional Physical Education
Reading Education	(ARD)	Childhood/Language Arts/Reading Education
School Psychology	(ASP)	Psychological & Social Foundations
Science Education***	(ASC)	Secondary Education
Social Science	(ASO)	Secondary Education
Specific Learning Disabilities	(ALD)	Special Education
Varying Exceptionalities	(AVE)	Special Education

* French, German, or Spanish.

** Engineering bachelor's degree required.

*** With concentrations in Biology, Chemistry, or Physics.

Program Plans of Study

Plan I. Plan I is a program of study designed for those with appropriate certification who desire to increase their competence in a subject specialization or receive professional preparation in one of the service areas.

A. Process Core (3-11 hours)

Students take a minimum of one Process Core (Foundations) course. Substitution may be made for the remaining courses with the advice and concurrence of the College Undergraduate/Master's Policy Committee.

- | | | | |
|-------------|-------------|----------------|----------|
| 1) EDF 6432 | 2) EDF 6481 | 3) EDF 6211 or | EDF 6215 |
| 4) EDF 6517 | or EDF 6544 | or EDF 6606 | |

B. Current Trends Course in Teaching Specialization (3 hours)**C. Specialization (18 hours)**

Programs will vary with student's background, experience, and specific interests.

Plan II. Plan II is a program of study designed for the holder of a non-education baccalaureate degree who desires to meet initial certification requirements as part of a planned program leading to the Master of Arts degree (not available in all areas; contact departments for more information).

A. Process Core (15 hours)

- | | | | |
|-------------|-------------|-------------|-------------|
| 1) EDF 6432 | 2) EDF 6481 | 3) EDF 6211 | or EDF 6215 |
| 4) EDF 6517 | or EDF 6544 | or EDF 6606 | 5) EDG 4620 |

B. Current Trends Course in Teaching Specialization (3 hours), plus undergraduate prerequisites as necessary.**C. Specialization (18 hours) - Minimum**

This is an individually planned graduate major in the teaching field or in an appropriate College of Education program for K-12 specialists.

D. Internship (6 hours)

EDG 6947, which involves planned observation and supervision by a member of the University faculty and a school staff member. Inservice teachers are required to complete this assignment over two semesters. Students should have completed the process core requirement and two-thirds of the graduate requirements in the area of specialization or an equivalency (using undergraduate hours taken in the field of specialization to complete the two-thirds requirement).

Plan III Plan III is a program of study for holders of a non-education baccalaureate degree who do not wish to meet teacher certification requirements in the State of Florida. The primary difference between this plan and Plan II is that students will not be required to take EDG 4620 and EDG 6947 (not available in all areas; contact departments for information).

A. Process Core (11 hours)

- | | | | |
|-------------|-------------|-------------|-------------|
| 1) EDF 6432 | 2) EDF 6481 | 3) EDF 6211 | or EDF 6215 |
| 4) EDF 6517 | or EDF 6544 | or EDF 6606 | |

B. Current Trends Course in Teaching Specialization (3 hours), plus undergraduate prerequisites as necessary.**C. Specialization (18 hours)**

This is an individually planned graduate major in an educational field.

Master of Education (M.Ed.)

Educational Leadership This degree is designed to prepare administrators and supervisors by providing them with organizational, management, and instructional leadership skills. Successful completion of the program leads to Florida certification in Educational Leadership.

Curriculum and Instruction This degree is designed for the professional educator who wishes to pursue advanced study. Students must have a minimum of two years of relevant educational or professional experience as judged by the program faculty. The primary objective is to prepare instructional leaders through graduate study in a variety of courses in curriculum, methods, supervision, learning principles, human interaction, and areas of specialization. The foundation areas (professional studies) receive greater emphasis in the M.Ed. programs than the M.A. programs. Coursework in the specialization may include courses in colleges other than the College of Education. This degree is offered in Theatre Education and Instructional Technology, as well as most of the areas listed under M.A. Programs.

Measurement & Evaluation This degree is designed to prepare mid-level testing and evaluation personnel for employment in school districts, government agencies, commercial testing, publishing, and educational evaluation enterprises. The program trains students with skills in test development, program evaluation, and data analysis.

Advanced Graduate Education

Students must meet the college-specified minimum GRE and GPA in order to be considered for admission to any program. They must also be favorably recommended by program faculty or admissions committee.

Specific information about the following programs is given under the department headings except for the Ed.S. and Ph.D. Interdisciplinary Studies emphases, which are administratively housed in the office of the Associate Dean for Programs. These programs provide opportunities for those students who have educational backgrounds and interests that span a variety of disciplines, either in or outside the College of Education. For information contact the Interdisciplinary Program Coordinator, Dr. E.V. Johanningmeier, FAO 276, (813) 974-3246.

Educational Specialist (Ed.S.) This degree is offered in Educational Administration/Leadership, and in Curriculum and Instruction, with specialization in most of the areas listed under the Ph.D. in Curriculum and Instruction. This degree consists of a minimum of 36 hours (includes 9 hours specialist project) beyond the master's degree and is flexible in its requirements.

Admission Requirements SEE PAGES 13-16.

Special requirements

1. GPA of 3.5 at master's level if undergraduate 3.0 GPA requirement not met.
2. Three letters of recommendation
3. An earned master's degree from an accredited graduate school*

* School Psychology is an exception to this requirement.

Doctor of Education (Ed.D.) The Doctor of Education degree is available in Administration/Supervision or Educational Program Development with emphasis in Adult Education, Elementary Education, Special Education Administration, or Vocational/Technical Education. The focus of this degree program is on the improvement of educational practice. Although research skills are recognized as being the basis of any doctoral program, the Ed.D. is considered less a research than a practitioner degree.

Admission Requirements SEE PAGES 13-16.

Special requirements

1. All Ed.S requirements above
2. GRE of 1000 in addition to GPA requirement
3. Certification in the field in which the student is seeking the Ed.D.

Ed.D. Program Structure

1. **Major Area**
 - A. Specialization (30 hours)
 - B. Dissertation (30 hours)*
 2. **Statistics/Measurement/Research Design (12 hours)**
 3. **Foundations (12 hours)**
- Total, Post-master's (84 hours)**

Doctor of Philosophy (Ph.D.) The Doctor of Philosophy degree is available in Curriculum and Instruction, with specialization in areas such as Adult Education, Elementary Education, Guidance and Counseling Education, Higher Education, Interdisciplinary Studies, Mathematics Education, Measurement and Evaluation Education, Music Education, Reading/Language Arts Education, School Psychology, Science Education, Special Education, and Vocational Education.

Admission Requirements SEE PAGES 13-16.

Special requirements (Same as Ed.D. above except that certification in the field is not required)

Ph.D. Program Structure

1. Major Area

- A. Specialization (21 hours)
- B. Cognate Area (Supporting courses outside specialization area) (12 hours)
- C. Dissertation (30 hours)*

2. Statistics/Masurement/Research Design (12 hours)

3. Foundations (8 hours)

Total, Post-master's (83 hours)

***Dissertation Hours Requirement** In the semester immediately following admission to candidacy, the student must be continuously enrolled in dissertation hours (including the summer term) until the dissertation is successfully defended. A minimum of 30 hours is required; these hours must be completed within the first 6 semesters after admission to candidacy; 4 hours is the minimum enrollment allowed for any one of the 6 semesters. If the dissertation has not been completed by the time the 30 hours have been accrued, the student must enroll continuously, including the summer term, for a minimum of 2 dissertation hours per semester until graduation. Exceptions to the continuous enrollment policy may be approved if the major professor writes a letter of petition to the Associate Dean for Programs, indicating specifically the nature and duration of the exception and the justification. Unless an exception has been approved, failure to enroll as specified will result in dismissal of the student from the program. To be readmitted, the student must secure permission from the major professor and write a letter of petition, cosigned by the major professor, to the Associate Dean for Programs, outlining in detail a timeline for completing the dissertation within one calendar year or less. The Associate Dean for Programs will approve or deny the petition. This process will be independent of, and will not replace, any procedures required by the University or the Graduate School for readmission.

Residency Requirement The purpose of the Ph.D. program is to prepare individuals who aspire to become producers of knowledge (researchers/university faculty). This requires that research training and theory exploration be major factors in the education of the Ph.D. candidate. It is during the residency that much of this training occurs, although not necessarily in formal course work. To accomplish this focus on training, each Ph.D. student is required to spend at least two consecutive semesters (about 30 weeks) in full-time residency on the Tampa Campus. The student should be engaged in no more than half-time work outside the Ph.D. program during this period. Reduction of job responsibilities will allow the student to take advantage of the opportunities for learning that are available in the University community during regular day-time hours, to participate in research projects with faculty and to teach courses at the University level.

The student must declare the semesters of residency as a part of the program of studies. Changes of these dates must be approved by the doctoral committee and must be submitted in writing to the Coordinator of Graduate Advising at least one semester before the residency is to occur. It will be the responsibility of the Coordinator of Graduate Advising to certify, at the time of application for graduation, that the residency requirement has been met.

Some candidates will find it difficult, if not impossible, to arrange time off from their jobs to meet the residency requirement. However, most of these people would probably be practitioners in school systems, for whom the Ed.D., not the Ph.D., degree would be more appropriate.

Program Description

Department of Adult and Vocational Education

The Adult and Vocational Education Department offers M.A. and M.Ed. degrees designed to prepare individuals in Adult Education and the various fields of Vocational Education, such as Business and Office Education, Distributive and Marketing Education, and Industrial-Technical Education (including Technology Education). The Ph.D., Ed.D., and Ed.S. are offered in Adult Education and in Vocational Education.

Adult Education

Requirements for the M.A. Degree (AAE) The Master's degree in Adult Education is intended to help individuals work with adult learners in a wide variety of school and non-school settings. It is a Plan III program that includes a minimum of 36 hours for the non-thesis option (30 for the thesis option) and consists of course work in the area of specialization, foundations, and electives.

Area of Specialization (16 hours non-thesis option) Specialization hours are designed to provide competence in areas associated with adult learners: instruction, curriculum development, program planning, organization and administration, and research techniques.

ADE 6385*	ADE 6080*	ADE 6161	ADE 6360
ADE 6160	ADE 6197	ADE 6380	ADE 6370
EVT 5190	ADE 6387	EVT 6563	EVT 6930*

*Required courses or equivalent.

Foundations Two foundations courses: one must come from EDF 6481 or EDF 6432; one must be an approved Psychological or Social Foundations course.

Electives (14-15 hours) Courses in a related area may include those from psychology, sociology, guidance, administration, gerontology, or any related field. At least one course must be outside the Department of Adult and Vocational Education. A thesis option is available.

Requirements for the M.A. Degree In Adult Education: Emphasis in Training and Staff Development (ADE-TSD) The Training and Staff Development (TSD) program in Adult Education is designed to develop knowledge and specific competencies required to prepare trainers to function successfully in both profit and non-profit organizations. The coursework is interdisciplinary, derived from an analysis of theory and skills recognized as essential in improving employee performance.

Foundation Courses A program will be planned that will include a minimum of 36 hours. The foundation requirements include 6-7 hours in the following:

EDF 6432*	EDF 6481*	and/or	EDF 7485*
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Other requirements are met through the required Foundations (EDF) courses listed in the Area Specialization.

Area Specialization Requirements of up to 24 hours in the specialization include the following, with substitutions to be made appropriate to the individual's background and experience. A practicum of 3-6 hours (ADE 6946) is required as part of the Area Specialization.

ADE 6385*	EDF 6165*	EDF 6166	MAN 6305 or
MAN 6204 or	SYO 6545	ADE 6946*	EDF 6167*
EDF 6281	ADE 6370	EDF 6288*	EDF 7655
ADE 6360	EVT 5369*		

* Required courses or equivalent.

Business and Office Education

Requirements for the M.A. Degree (ABE) Plan I: A program will be planned to include a minimum of 32 hours. In addition, a student entering the program who has not yet met competency requirements for business education certification will complete course work in any needed competency area.

The planned program must meet the Master's Degree Process Core requirements and include a minimum of 16 hours in Business and Office Education or related areas of Adult and Vocational Education selected in consultation with an advisor.

This degree may be completed with a thesis option. Plan II and III programs are also available.

Distributive and Marketing Education

Requirements for the M.A. Degree (ADE) Plan I A program will be planned to include a minimum of 32 hours as follows:

1. EDF 6432 and EDF 6481; EDF 6211 or EDF 6215; and EDF 6606 EDF 6517 or EDF 6544
2. Specialization requirements of 11 hours in Distributive and Marketing Education or related areas within Adult and Vocational education are designed to provide competence in administration, supervision, curriculum development, program management, methods of teaching, and research techniques as each of these relate to distributive education programs. Specialization courses will be selected in consultation with an advisor depending upon the individual's background and experience.
3. Selected courses in a related area, such as Business Administration, Administration, Supervision, Counselor Education, Special Education (3-8 hours). Plan II and III programs are also available.

Industrial/Technical Education

Requirements for the M.A. Degree (AIT) Plan I: Before being admitted to the degree program, a prospective student must have met the work experience and professional preparation requirements for certification in Industrial, Technical, Health Occupations, or Technology Education. Requirements include the process core and courses in the specialization area selected in consultation with an advisor (minimum of 36 hours).

Plan II and III programs are also available.

Department of Childhood/Language Arts/Reading Education

The Childhood/Language Arts/Reading Education Department offers the M.A. degree in Elementary Education and Reading Education; the Ed.S. and Ph.D. degrees in Curriculum and Instruction with emphases in Elementary Education and Reading/Language Arts; and the Ed.D. degree in Education Program Development with an Elementary Education emphasis. The Ph.D. in Curriculum and Instruction with an emphasis in Early Childhood Education is currently being reactivated, and Early Childhood certification may be included in a Master's degree (contact the department chair for information).

M.A. Degree in Elementary Education (AEE) Plan I

This program requires certification as an elementary teacher for admission*. A minimum of 33 hours is required. Common core required courses: LAE 6415, EDG 6935, RED 6116, EDF 6481, and EDF 6120 or EDF 6215.

The student will choose one of the following areas of emphasis:

- A. Elementary Curriculum Emphasis:** An individually planned program of elementary education courses approved by a departmental adviser.
- B. Language Arts Emphasis:**
LAE 6301 LAE 6315 LAE 6616 RED 6540
- C. Early Childhood Emphasis:** PR: EEC 4203, and EEC 4706, or equivalent
EEC 6406 EEC 6926 EEC 6405 EEC 6705
EEC 6261

D. Literacy in a Diverse Society Emphasis: A program planned with an advisor in this emphasis area. (This program has been submitted to the Florida Department of Education for approval for E.S.O.L. endorsement.)

* Plans II and III are available for non-certified students.

M.A. Degree In Reading Education (ARD)

The M.A. in Reading Education is designed to prepare special reading teachers, clinicians, supervisors, directors, and coordinators of reading for school systems.

Education core courses include:

Plan 1 LAE 6415, EDF 6481, and LAE 6616.

Reading Education specialization courses

RED 6116	RED 6247	RED 6365	RED 6544
RED 6545	RED 6747	RED 6540	

Optional thesis available.

Students entering the program with an undergraduate major outside of elementary education will be required to take RED 4310, RED 4511, and EDF 6432 before beginning the specialization sequence. Electives must be chosen in conference with the adviser.

Selective retention policies require that the student maintain a "B" average, with no more than three hours of "C" work in the major area* courses and a total of no more than 6 hours of "C" work in the program. If either of these requirements is not met, the student will be dropped from the program. Reinstatement may occur when the student retakes one of the courses in which a "C" was earned and receives an "A".

*Major area courses are RED 4310, RED 6116, and all Reading Education courses. Plans II and III are available.

Ed.S. Degree in Curriculum and Instruction with an Emphasis in Elementary Education (SEE) Prepares in-school leaders as experts in instruction and program development in a variety of educational settings.

Admission Requirements SEE PAGES 13-16, 102 for general requirements.

Special requirements

1. Eligibility for certification in Elementary Education.
2. Two or more years of successful work experience in programs for children.
3. One degree in Elementary Education.
4. Post-baccalaureate work with a GPA of 3.25.
5. An official record of a GRE score which meets the College requirements.
6. A statement of professional history and goals from the applicant, and three letters of recommendation.

Note: Applicants from foreign countries will be appraised individually.

Program of Studies

1. Elementary Education Specialization and related courses (24 hours)*
2. Project (9 hours)*
3. Electives (3 hours)
4. Comprehensive Examination
- Total (36 hours)***

*All represent post-master's credit and are minimum requirements.

Ed.S. Degree in Curriculum and Instruction with an Emphasis in Reading/Language Arts Education (SRD) Prepares in-school leaders with expertise in R/LA processes, designing and evaluating R/LA instructional materials and teaching techniques, and the treatment of R/LA problems. The Ed.S. program is separate from the Ph.D. program and is planned as a terminal degree. Applicants should realize that Ed.S. coursework is not necessarily applicable to the Ph.D. degree.

Admission Requirements SEE PAGES 13-16, 99-102 for general requirements.

Special requirements

1. At least one year of successful experience in a professional school role.

2. A master's degree in education with a minimum of 16 graduate hours in R/LA or related disciplines. If this is not met, admission may be granted if the student is willing to lengthen the program to make up deficiencies.
3. Post-baccalaureate work with a GPA of 3.25.
4. An official record of a GRE score which meets the College requirements.
5. Certification in at least one related area of education.
6. A statement of professional history and goals from the applicant, and three letters of recommendation.

Note: Applicants from foreign countries will be appraised individually.

Program of Studies

1. Specialization in R/LA (15 hours)*
2. Electives (12 hours)
3. Project (9 hours)*
4. Comprehensive Examination

Total (36 hours)*

*All represent post-master's credit and are minimum requirements.

Ed.D. Degree In Educational Program Development with an emphasis in Elementary Education (EEE). Provides educators with an opportunity to study a variety of academic areas.

Admission Requirements SEE PAGES 13-16, 99-102 for general requirements.

Special requirements

1. A master's degree in Elementary Education from an accredited university or college with a GPA of 3.5 or better.
2. Two or more years of successful work experience in programs for children.
3. A statement of professional history and goals from the applicant, and three letters of recommendation from persons knowledgeable about the applicant's professional and academic competencies.

Note: Applicants from foreign countries will be appraised individually.

Program of Studies

1. Elementary Education Specialization (24 hours)
2. Dissertation (See page 103 for dissertation enrollment requirements) (30 hours)
3. Curriculum (6 hours)
4. Statistics, Measurement, and Research (11-12 hours)
5. Foundations (12 hours)

Total (83-84 hours minimum)

Ph.D. Degree Programs Prepare leaders in the field, such as college and university faculty, directors of programs for school systems, or clinical directors in private or public settings. The programs are designed to provide expertise in research into learning processes, designing and evaluating instructional materials and teaching techniques, university and college teaching, and the teaching of disabled learners.

Ph.D. Degree in Curriculum and Instruction with an Emphasis In Elementary Education (DEE)

Admission Requirements SEE PAGES 13-16, 99-102 for general requirements.

Special requirements

1. Eligibility for certification in at least one related area in elementary education.
2. Grade point average of 3.5 in post baccalaureate coursework.
3. A degree in Elementary Education.
4. At least two years of successful experience in a professional role with children.
5. A master's degree in education with a minimum of 10 graduate hours in elementary education; if this requirement is not met, admission may be granted with the understanding that the applicant's program will be lengthened to cover deficiencies.

6. A statement of professional history and goals from the applicant, and three letters of recommendation from persons knowledgeable about the applicant's academic potential.

Note: Applicants from foreign countries will be appraised individually.

Program of Studies

1. Foundations (8 hours)
 2. Statistics/Measurements/Research Design (11-12 hours, including Tool requirement)
 3. Elementary Specialization (21 hours)
 4. Dissertation (See page 103 for dissertation enrollment requirement) (30 hours)
 5. Cognate Area (12 hours)
 6. Language/Computer Science (no credit)
- Total (83-84 hours minimum)**

Ph.D. Degree in Curriculum and Instruction with an Emphasis in Reading/Language Arts Education (DRD)

Admission Requirements SEE PAGES 13-16, 99-102 for general requirements.

Special requirements

1. At least one year of successful experience in a professional school role.
2. A master's degree in education with a minimum of 10 graduate hours in R/LA or related disciplines; if this is not met, admission may be granted if the student is willing to lengthen the program to make up deficiencies.
3. Grade point average of 3.5 in post-baccalaureate coursework.
4. A statement of professional history and goals from the applicant, and three letters of recommendation.
5. Certification in at least one related area in education.

Note: Applicants from foreign countries will be appraised individually.

Program of Studies

1. Specialization R/LA (21 hours)
 2. Cognate Area (12 hours)
 3. Dissertation (See page 103 for dissertation enrollment requirement) (30 hours)
 4. Statistics/Measurement/Research Design (11-12 hours, including Tool requirement)
 5. Foundations and Curriculum (8 hours)
- Total (83-84 hours)**

Department of Educational Leadership

These programs are designed to improve performance in school leadership positions. Three degrees are offered: Master of Education, Educational Specialist, and Doctor of Education.

The Department also offers the Ph.D. in Curriculum and Instruction with a specialization in Higher Education and a Master of Arts degree in Junior College Teaching in cooperation with the other colleges in the University.

Educational Leadership

Requirements for the M.Ed. Degree (ESA)

Admission Requirements SEE PAGES 13-16, 99-102.

Special requirements

1. Certification in a teaching field (except Plan III students).
2. At least 2 years of successful teaching experience (Plan III students must have 2 or more years of relevant work experience).

Program Requirements The program requires a minimum of 39 hours. Typically, the student's program will consist of the following:

1. Required Courses (24 hours)

EDA 6061	EDA 6192	EDA 6232	EDA 6242
EDS 6050	EDG 6627	EME 6425	EDF 6432

2. Specialization Courses (6 hours)
EDE 6205 and EDG 6693, or EDM 6235 and EDG 6694, or
ESE 6215 and EDG 6695, or EEX 6511 and EEX 6025
3. Electives (9 hours)
6 elective hours in Educational Leadership and 3 elective hours in Foundations.
Students already holding a masters degree and meeting all admission
requirements may have the 9 hours of electives waived.
4. Comprehensive Examination

Requirements for the Ed.S. and Ed.D. Degrees

Admission Requirements SEE PAGES 13-16, 99-102.

Special requirements

1. Certification in Educational Leadership.
2. Screening by the Educational Leadership Department.

Applicants should contact the Educational Leadership Department and complete a preliminary application prior to making application to the Graduate School.

Program Requirements The major components of study in the Ed.S. and Ed.D. degree programs are:

- A. **Specialization In Educational Administration/Supervision required courses;**
Electives; Project/Dissertation; Comprehensive Examination for Ed.S. (See page
103 for Dissertation Hours Requirement)
- B. **Foundations**
Social Foundations; Psychological Foundations
- C. **Measurement and Statistics**
- D. **Computer Science**

Junior College Teaching Program

Requirements for the M.A. Degree Areas of specialization in the Junior College program include:

Biology	Business*	Chemistry
English	Engineering**	Economics
French	Geography	Geology
History	Mathematics	Physics
Political Science	Sociology	Spanish
Speech Communication		

* Business specialization requires, in addition, a minimum score of 475 on the GMAT.

**Engineering bachelor's degree required.

Admission Because of the unique character of the Junior College program, which integrally involves two colleges of the University, admission and advisory regulations go beyond those listed in the section dealing with Graduate Study.

Application for admission to the program is made via the Office of Admissions. Action on all applications is the joint responsibility of the two colleges involved. Duplicate sets of the student's complete record will be on file in both colleges, with the College of Education given responsibility for making official recommendations for the granting of the degree to the Vice President for Academic Affairs and to the Registrar.

Program A minimum of 32 hours, plus an internship of 6 hours.

1. Specialization

Typically, the student's program will include 24-30 hours of graduate work in a field of specialization. The sequence to be completed will be designed in consultation with a major field adviser. This program is based on the assumption that the student has an undergraduate background in his specialization area that is roughly equivalent to the pattern of the appropriate USF major. Students admitted without such preparation may be required to correct deficiencies. A well prepared student may be permitted to take fewer courses in his specialization area, substituting approved electives from other fields of study.

2. Professional Education

Typically, the student's program will include approximately 15 hours of graduate work in professional education. Additional hours may be required if the student's background is weak in relevant areas. The internship will consist of full-time supervised teaching for one semester or part-time teaching for two semesters. At least one-half of the internship must be in the community college, the other half being left to the discretion of the student's adviser. The internship follows the completion of professional education coursework.

Department of Educational Measurement and Research

This department provides support services to graduate programs and offers courses and consultation in the following areas; Measurement, Statistics, Program Evaluation, Research Design, Computer Applications, Systems Approaches to Planning, Evaluation, and Development. Two graduate degrees are offered: Master of Education and Doctor of Philosophy.

Master of Education (M.Ed.) Prepares personnel to work in school districts, state government agencies, commercial test publishing, and program evaluation enterprises. The 41 semester hour program prepares personnel with specialized skills in test construction, program evaluation, research design, and data analysis. Course requirements include:

Process Core (14)

EDF 6432 (3) EDF 6481 (3) EDF 6215 (4) EDF 6606 (4)

Concentration (9)

EDG 6627 (3) EDF 6485 (3) EDF 6288 (3)

Specialization (18)

EDF 6407 (4) EDF 7408 (4) EDF 7488 (1) EME 6412 (3)
EDF 6437 (3) EDG Computer Elective (3)

Doctor of Philosophy (Ph.D.) The Ph.D. degree in Curriculum and Instruction is available with emphasis in Measurement and Evaluation. Focus is upon developing systematic inquiry skills essential to the objective study and evaluation of educational processes and products.

The intent of the program is to develop personnel who can strengthen the research and development capabilities of agencies concerned with education. Emphasis is placed upon those aspects of research and evaluation design, measurement, statistical analysis, and systems approaches that are particularly relevant to decision-oriented research. In addition to consideration of traditional experimental designs, attention is given to quasi-experimental, survey, policy analysis, historical, ethnographic, case study, and naturalistic approaches.

While the doctoral program in measurement and evaluation emphasizes methodology, concentration in substantive disciplines within education and/or the social sciences is possible. Concentration in a cognate provides a context within which the methods of systematic inquiry may be applied.

Program Requirements

1. Foundations (8)

To be selected from offerings in Psychological Foundations and Social Foundations.

2. Specialization or Major Emphasis (30)

EDF 7940 (8) EDF 7488 (1) EDF 7493 (4) EDF 7485 (3)
EDF 7410 (4) EDF 7655 (4) EDG 7667 (3) or EDF 7692 (3)
EDG 7910 (3)

3. Dissertation (See page 103 for dissertation enrollment requirement.) (30)

4. Measurement/Statistics (19)

EDF 6407 (4) EDF 7408 (4) EDF 7484 (4) EDF 7437 (3)
EDF 7438 (4)

5. Cognate (12)
Elective Courses

Department of Music Education

See Fine Arts for program descriptions of the M.A. in Music Education and the Ph.D. in Curriculum and Instruction with an emphasis in Music Education.

School of Physical Education, Wellness, and Sport Studies

Requirements for the M.A. Degree (PET) The master's degree program in Physical Education is designed to enhance the professional skills of physical education teachers with a focus on the science of human movement and the teaching-learning process. Students may concentrate their program of study in areas of Elementary or Secondary Physical Education or Physical Education for Handicapped students. Completion of a minimum of 30 hours of study is required for the Masters degree. A comprehensive final oral examination is required during the semester in which the student completes 30 hours of coursework.

Admission Requirements SEE PAGES 13-16.

Special requirements

1. Undergraduate degree in Physical Education.
2. Recommendation from the Departmental Admission Committee.

PET 6016C, Professional Assessment, is required, and it is recommended that students enroll in this course during their first semester of study in the program. Typically students will enroll in courses from the following:

PET 6016	PET 6205	PET 6645	PET 6695
PET 6425	EDF 6432	PET 6496	PET 6305
PET 6910	PET 6906		

**Department of Psychological and
Social Foundations of Education**

Counselor Education Programs

Graduate programs in Counselor Education lead to the Master of Arts (M.A.) degree in Counselor Education, the Educational Specialist Degree (Ed.S) in Curriculum and Instruction with specialization in Counselor Education and the Doctor of Philosophy (Ph.D.) degree in Curriculum and Instruction with specialization in Counselor Education. These programs prepare students to become counseling professionals as practitioners, supervisors, educators and/or researchers in a variety of settings.

Admission Requirements for the M.A. Degree SEE PAGES 13-16. Applicants are admitted for the Semester I (Fall) and Semester II (Spring) terms. All admission requirements must be completed by June 15th for Semester I and by November 15th for Semester II. Applicants must meet university and college admission requirements which require:

1. A GPA of 3.0 (B) or higher on all upper division undergraduate work and a GRE score (V. + Q. combined) that meets the college-specified minimum
- or 2. A GRE score of 1000 or higher and a GPA that meets the college-specified minimum
- or 3. A GPA of at least 3.5 on a previous master's degree for those applying for a second M.A.

In addition, applicants must present three letters of recommendation, a personal statement of professional goals and must interview with a member of the Counselor Education faculty. Exceptions to the interview requirement can be arranged for out-of-state applicants.

M.A. Degree programs**School Counseling (Plan I and Plan II)**

Plan I (50 sem.hrs.) is for students who hold current Florida teaching certification.

Plan II (60 sem. hrs.) is for students who do not.

Foundations (11 hours, all Plan I & II)

1. EDF 6481
2. One of the following:
EDF 5136 EDF 6120 EDF 6123 EDF 6215
3. EDF 6354

Specialization (39 hours, all Plan I & II)

1. EGC 6006 EGC 6225 EGC 6306 EGC 6472
EGC 6706 EGC 6785 EGC 6948
- and 2. Elementary School Emphasis
EGC 6464 EGC 6509 EGC 6830
- or 3. Secondary and Adult Emphasis
EGC 6435 EGC 6510 EGC 6835

In addition to the above, Plan II includes:

- a. EDF 6432
- b. EDF 6517 or EDF 6544 or EDF 6606
- c. EDG 4620

Community Counseling (Plan III)

Plan III (51 sem. hrs.) is for students who do not hold current Florida teacher certification and who prefer to work in community-based counseling positions rather than elementary or secondary schools.

Foundations (11 hours)

1. EDF 6481
2. One of the following:
EDF 5136 EDF 6120 EDF 6213 EDF 6215
3. EDF 6354

Specialization (40 hours)

1. EGC 6006 EGC 6165 EGC 6225 EGC 6306
EGC 6728 EGC 6785 EGC 6891
- and 2. Counseling Children
EGC 6469 EGC 6509 EGC 6830
- or 3. Counseling Adolescents and Adults
EGC 6435 EGC 6510 EGC 6835

The M.A. programs have no full-time residency requirement. A student who is employed on a full-time basis is limited to 9 hours per semester. Exceptions are made only with permission of the student's academic adviser.

Requirements for the Ed.S. Degree The Educational Specialist program in Curriculum and Instruction, with specialization in Counselor Education, is designed to improve the skills and competence of practicing counselors. The program comprises 37 hours and can be completed in two years by part-time students through evening course work. Applicants are admitted once a year for the fall semester. All admission requirements must be completed by June 15. In addition to meeting the University and college requirements for admission to Ed.S. programs, applicants must meet the following departmental requirements:

1. A master's degree with coursework equivalent to the USF Counselor Education M.A.
2. GPA of 3.5 or higher at Master's level and GRE scores of 900 or higher.
3. Approximately one year post-master's degree experience as a counselor in a professional setting.
4. Three letters of recommendation.
5. An interview with a member of the departmental faculty.
6. An audio-tape recording of a recent counseling session conducted by the applicant.

7. A personal statement about professional background, interests, and goals. The departmental office will offer additional information on the application procedure. The Ed.S. program (37 hours) includes the following courses:

Counselor Education (18 hours)

EGC 6105 EGC 7437 EGC 7935
EGC 6472 EGC 7446

Research (4 hours)

EDF 6407 EGC 6971 (9 hours)

Cognate Area/Minor (6 hours) To be determined jointly by student and adviser.

The Ed.S. program has no full-time residency requirement. The course work listed under Counselor Education is to be taken in sequence. Other course work is to be planned in consultation with the student's adviser.

Requirements for the Ph.D. Degree The formal designation of this degree is Doctor of Philosophy (Ph.D.) in Curriculum and Instruction, with specialization in Counselor Education. The academic program is designed to provide advanced preparation for counselors, supervisors of counseling and guidance programs, counselor educators, and researchers in counseling and guidance.

The Counselor Education department admits doctoral applicants once a year for the fall semester. All admission requirements must be completed by June 15. In addition to the University and college requirements for admission to Ph.D. programs, applicants must meet the following departmental requirements.

1. A master's degree in counseling from an accredited institution or a master's degree in another field with coursework equivalent to the USF Counselor Education M.A.
2. A minimum of one year of counseling experience gained in a professional setting after earning the master's degree.
3. A grade point average of 3.5 at the master's level and a GRE score of 1000.
4. Three letters of recommendation from former employers, supervisors, or professors addressing the applicant's personal characteristics, ability, motivation for advanced graduate study, and professional leadership in the field of counseling and guidance.
5. Two personal interviews with faculty members of the Counselor Education Department, to be arranged by appointment at the request of the student.
6. An audio-tape recording of a recent counseling session with a client from the applicant's current setting.
7. A personal statement of the applicant's professional background, interests, and goals. Both the evidence of professional commitment and the quality of writing competence will be critically evaluated.

The Ph.D. Program includes the following courses:

- A. Foundations and Curriculum: (11-12 hours)
Specified from advanced graduate level courses.
- B. Measurement, Statistics, Research Design: (11-12 hours)
EDF 6407 EDF 7408 EDF 7409
or an elective from advanced graduate level courses.
- C. Counselor Education: (23 hours)
EGC 6472 EGC 7437 EGC 7446
EGC 7935 EGC 7894 (8 hours required)
- D. Cognate Area/Minor: (11 hours)
- E. Dissertation: (See page 103 for Dissertation Hours Requirement)

The minimum curricular requirements include: (a) at least two years of academic work beyond the master's degree; (b) at least one academic year of residency on the Tampa campus of the University of South Florida. Residency is defined as a minimum of two courses totaling 9 hours of graduate work per semester, and the equivalent of half-time employment in teaching and/or assisting faculty with research over two consecutive semesters.

School Psychology Program

The School Psychology Program offers two degrees in Curriculum and Instruction with specialization areas which qualify students for the professional practice of school psychology. The Educational Specialist (Ed.S.) degree consists of approximately 95 graduate semester hours and includes a full-year, full-time internship and a thesis. The Doctor of Philosophy (Ph.D.) degree consists of approximately 60 semester hours beyond the Ed.S. degree and includes advanced leadership coursework, specialization courses in school psychology, and the dissertation. A Master of Arts (M.A.) degree is earned by most students during the first year of their Ed.S. program. However, the M.A. is not considered a terminal degree and is not sufficient for state certification in school psychology.

The programs in School Psychology at the University of South Florida are offered through the College of Education's Department of Psychological and Social Foundations in cooperation with the College of Arts and Sciences' Department of Psychology. The programs have been designed specifically for training in school psychology, and they have been developed to meet all relevant national accreditation standards (most notably, the National Council for the Accreditation of Teacher Education--NCATE, and the American Psychological Association--APA).

The programs in School Psychology at the University of South Florida are committed to training professionals who have expertise in the depth and diversity of both psychology and education. This training is accomplished within a scientist-practitioner model which emphasizes comprehensive school psychological services using a social and cognitive behavioral learning theory orientation that recognizes the impact of children's individual differences.

Ed.S. Degree The Ed.S. program must satisfy College of Education, University, and State Department of Education criteria, the latter in order for the student to be certified as a school psychologist in the State of Florida.

Residency. Currently, the master's/specialist program can be completed in three calendar years. Since the curriculum is carefully sequenced, full-time study, as defined by the Program Adviser or Director, is required of students without prior graduate work. It is assumed that a student would have time for an assistantship or part-time job up to 20 hours per week. However, it is expected that students who need financial assistance will accept program assistantships, as available, before any other type of aid. When outside employment is a possibility, such employment must be acceptable to the School Psychology Faculty. In fact, the Program Director must be notified in writing of all gainful employment engaged in by students throughout their studies when that employment exceeds four hours per week.

The Ed.S. Curriculum. From the College's perspective, the Ed.S. program consists of a minimum of 36 semester hours beyond the master's degree. These credit hours are distributed as follows:

Specialization Coursework: 25-27 Credit Hours

SPS 6971 Thesis (Project): 9 Credit Hours

From the School Psychology Program's perspective, the Ed.S. program is an integrated program consisting of approximately 95 semester hours (post B.A.) across a number of theoretical, professional, and support areas.

The Ph.D. Degree

The Ph.D. program consists of a minimum of 84 credit hours beyond the Master's degree. Students in the Ed.S. program in School Psychology will be allowed to use up to 12 semester hours of USF credit earned during the first year of their Ed.S. program toward the Ph.D. Other students who have taken graduate level courses as special students at USF will be allowed to transfer up to 12 semester hours as approved by the Program Faculty. Finally, students from other institutions will be allowed to transfer in 8 graduate semester hours again as approved by the Program Faculty.

Because the Ph.D. program consists of 84 credit hours beyond the Master's USF School Psychology students may incorporate coursework from the second and third

years of their Ed.S. program (assuming it is post-Master's) into the Ph.D. program of studies.

In addition, the USF School Psychology admits Ph.D. students who have already earned an Ed.S. or the equivalent and are certified as school psychologists and/or who are looking for advanced doctoral study in the field. These advanced students create their own individualized specialization program within the broader school psychology curriculum, allowing for more in-depth study of content and issues in our field.

Residency. Full-time study is required of most Ph.D. students at least until they complete all coursework and Qualifying Exams and have only the Dissertation to complete. Minimally, this will involve two years of full-time study after the Ed.S. degree. Full-time study involves a minimum of 9 semester hours of coursework per semester. Residency involves consecutive academic years of full-time study; students are allowed assistantship work or a part-time job up to 20 hours per week during residency. Students working in psychology-related positions outside of the University must have these positions approved in advance to ensure practice within all appropriate ethical guidelines. The Program Director must be notified in writing of all gainful employment engaged in by students throughout their studies when that employment exceeds four hours per week. A part-time Ph.D. option is available for selected students; more information on this option is available from the Program Director.

Admission to the Program and Financial Aid

The primary assumption underlying admission to either the Ed.S. or the Ph.D. program is that every student who is accepted is capable (a) of successfully completing his or her respective program and (b) of performing competently in the field as a School Psychologist. For this reason, the selection and admissions procedure is quite rigorous. Applicants are selected based on their potential to benefit from the training program and their potential to contribute both to the Program and the field of School Psychology.

Within the admissions process, a culturally diverse student body is actively recruited, and applicants of academic and professional promise are not systematically excluded on the basis of race, ethnic origin, sex, age, religion, lifestyle, sexual orientation, or physical handicap. The admissions process is highly selective, but flexible; all pertinent data submitted for consideration will be evaluated as an entire package. That is, no one piece of information will be weighted substantially over another so long as they meet the minimal requirements of the University and College. The evaluation process, however, does involve both academic and interpersonal considerations. The profession of School Psychology requires that the practitioner possess personal characteristics as well as academic and technical competencies, and the admission process attempts to evaluate both these areas.

Specifically, admission to the program is based on past academic work; GRE verbal and quantitative scores; pertinent work, volunteer, and extracurricular experience; letters of recommendation; and a statement of professional goals that may include a current resume or vita. Students may apply, after conferral or anticipated conferral of their Bachelor's degree, at either the doctoral or Ed.S. level depending on their professional aspirations. Applicants are encouraged to complete their applications by March 1st. Most acceptances occur during the early spring. All students are accepted to begin their program in the Fall Semester; no January admissions are permitted.

The application process begins by securing an application and graduate catalog from the Office of Graduate Admissions, University of South Florida, Tampa, Florida 33620 or by calling/contacting the School Psychology Program (Department of Psychological and Social Foundations, FAO 268, (813) 974-3246). Two sets of information must be provided by the applicant:

1. To the Office of Graduate Admission should go:
 - a. The completed application and application fee;
 - b. An official copy of the student's GRE scores (scores longer than 5 years old are not acceptable; the College requires the GRE verbal plus quantitative scores to add up to 1000 minimally for doctoral study);
 - c. An official copy of all transcripts for all undergraduate and graduate work.

2. To the School Psychology Program (c/o Dr. Howard Knoff, Program Director):
 - a. Three letters of recommendation sent directly to the program;
 - b. A writing sample such as a major research paper, a write-up of a psychological experiment, or a major literature review;
 - c. A statement of professional goals and a current vita or resume which discusses past activities or experiences relevant to the application.

Upon receipt of application material, prospective students are sent acknowledgments so they can keep abreast of the application's status and so they know when it is complete. Once complete, the application file is reviewed by faculty members who individually recommend whether or not the candidate should be invited in for a formal interview. During the interview, the applicant will have the opportunity to pose questions to faculty and current students in order to further familiarize themselves with the program.

After the interview, a decision on the student's candidacy is made based on his/her record/application and his/her:

- a. career goals and their compatibility with those of the program
- b. potential for successful completion of the program
- c. sensitivity to the needs of children, families, teachers, and systems
- d. interpersonal skills
- e. communication skills, both oral and written

Note: If geographical constraints prohibit a personal interview, a telephone interview may be conducted by the faculty or a taped interview may be used. In addition, the faculty reserves the right to contact all references specified as appropriate by the candidate.

Financial Aid. Normally, all of our students receive funding through assistantships, fellowships, and/or tuition waivers for the duration of their training. Separate forms, where necessary, are forwarded with each acceptance letter. However, as some fellowships have application deadline dates as early as February 1st, applicants are encouraged to obtain the appropriate forms from the Office of Financial Aid, SVC 262, or the College of Education, EDU 123, as quickly as possible. Internships, though not formally considered financial aid, are normally paid; advanced internships may be paid depending on the site.

Sample Curriculum

Ed.S. degree The following outline represents a typical program for a student without prior graduate work. Other courses may be selected on an individual basis to fit background and goals, and equivalent work is acceptable. Minor changes may be made due to routine program development.

A. Academic/Theoretical Bases

Developmental Psychology			
EDF 6120	SPS 6806	DEP 6058*	
Learning and Cognitive Psychology			
EDF 6215	EDF 6217	EDF 6938	EXP 6406*
EXP 6526*	EXP 6608*		
Personality and Abnormal Psychology			
CLP 6166*	CLP 6477*	PPE 6058*	SPS 6201
Biological/Physiological Psychology			
EDF 6213	PSB 6056*		
Social Psychology			
SOP 6059*			

B. Statistics, Measurement, and Professional Research

EDF 6407	EDF 6481	EDF 7408	EDF 7410
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C. Professional School Psychology

SPS 6197	SPS 6198	SPS 6943	SPS 6944
SPS 6936	SPS 6700	SPS 6701	SPS 6702
SPS 6940	SPS 6941	EDF 6166	SPS 6806
SPS 6196			

- D. Social/Organizational Foundations of Education**
 EDF 6517 EDF 6544 EDF 6606 EDF 7655
- E. Thesis**
 EDG 6971 Thesis
- F. Internship**
- G. Electives**

Selected courses in the Counselor Education, Special Education, and Reading Education programs and in the Department of Psychology.

- * Offered in the Department of Psychology

Ph.D. Degree. With our specialist curriculum forming a foundation, each doctoral student's program additionally will include a full-year advanced professional seminar (SPS 7936), two courses in an advanced specialization area as chosen by the student (from SPS 7166, SPS 7197, SPS 7700, SPS 7701), an advanced supervision course (SPS 7090), an advanced internship, and the dissertation. (See page 103 for Dissertation Hours Requirement) At this level, emphasis is on research and on training for leadership positions in school psychology.

Department of Secondary Education

The department offers programs leading to the Master of Arts (M.A.), Master of Education (M.Ed.), Educational Specialist (Ed.S.), and Doctor of Philosophy (Ph.D.).

Master of Arts (M.A.) The M.A. degree is designed for individuals who hold an undergraduate degree in Arts/Arts Education, English/English Education, Foreign Language/Foreign Language Education (or other appropriate undergraduate degree), Mathematics/Mathematics Education, Science/Science Education, or Social Science/Social Science Education. Three plans of study are available, depending upon the candidate's background and future goals (see "Program Plans of Study", page 100).

Admission Requirements SEE PAGES 13-16, 99-102 for general requirements. See the individual programs for special requirements.

Master of Education (M.Ed.) The M.Ed. degree in Curriculum and Instruction is a flexible degree program intended to improve the skills of the classroom teacher. The M.Ed. is offered with an emphasis in English Education, Foreign Language Education, Instructional Technology, Mathematics Education, Science Education, Social Science Education, Theatre Education, and Middle Grades Education. The program will be planned on an individual basis by the student and an advisory committee.

Admission Requirements SEE PAGES 13-16, 99-102 for general requirements. Consult the department for special requirements.

Course Requirements A minimum of 33 hours, with 60 percent or more at the 6000 level.

1. 18 hours in the area of emphasis, to include courses in content and/or the teaching of this content
2. 3 hours in graduate curriculum and instruction (EDG 6627)
3. 12 hours in foundations of education (EDF 6432, EDF 6481, EDF 6211 or EDF 6215, and EDF 6517 or 6544 or 6606)

Comprehensive Examination. The comprehensive examination will consist of a written and/or oral examination in the major area.

Educational Specialist (Ed.S.) The Ed.S. degree in Curriculum and Instruction is offered with an emphasis in English Education, Mathematics Education, or Science Education to prepare specialists for classroom instruction or leadership/supervisory roles.

Admission Requirements SEE PAGES 13-16, 99-102 for general requirements.

Special requirements

1. A master's degree with an emphasis in English Education, Mathematics Education, or Science Education (or approved related areas) with a 3.25 GPA.
2. Favorable recommendation from the Departmental Admissions Committee.

Course Requirements A minimum of 36 hours. The Ed.S. Program is highly individualized. Within the program structure, candidates' programs are planned on the basis of previous educational and professional experience and future goals. The program of study must be approved by a faculty committee.

1. Major Area (15 hours)

Courses in English Education, Mathematics Education, or Science Education, and/or courses in Natural Sciences or Arts and Letters.

2. Cognate Area (12 hours)

Courses in supervision, administration, educational technology, curriculum development, measurement, evaluation, educational research, and/or other approved related areas.

3. Project (9 hours)

Completed under the direction of a faculty committee.

Comprehensive Examination The comprehensive examination consists of a written and/or oral examination. The candidate will be required to make an oral defense of the project.

Doctor of Philosophy (Ph.D.) The Ph.D. in Curriculum and Instruction, with an emphasis in Mathematics Education or Science Education, is granted on evidence of proficiency and distinctive academic achievement and by the demonstration of ability to do original, independent investigation culminating in a dissertation.

Admission Requirements SEE PAGES 13-16, 99-102 for general requirements.

Special requirements

1. Two years of teaching experience
2. Approval of department chairperson

Course Requirements A minimum of 83 hours beyond the Master's is required. This program is highly individualized. Candidates' programs are planned (with approval by a faculty committee) based upon previous experience and future goals. A tools of research requirement must be satisfied and the following areas must be included:

1. Major Area

- a. Mathematics or Science Education (21 hours)
- b. Cognate Area (Supporting courses outside specialization area) (12 hours)
- c. Dissertation (See page 103 for Dissertation Hours Requirements)

2. Statistics/Measurement Research Design (12 hours)

3. Foundations (8 hours)

Art Education (AAR)

Master of Arts (M.A.) The M.A. degree in Art Education is offered in three different plans, each with a choice of concentration in the following:

1. Studio
2. Arts administration, supervision
3. Research and curriculum development
4. Museum education
5. Certification, Art K-12
6. Community Arts
7. Expressive Arts
8. Health Arts
9. Computer-Media Technology for Visual Learning

Plan I For candidates already certified to teach art and who wish to pursue advanced training.

37 hours minimum:

Art Education (13)	Art Studio (8)	Art History (4)
Foundations in Education (3)	Electives (9)	

Plan II For candidates who wish to gain teacher certification upon completion of the M.A. Program.

56 hours minimum:

Art Education (23) Art Studio (8) Art Studio (4)

Foundations in Education (15) Internship (6)

Plan III For candidates who do not hold a baccalaureate degree in education and who do not desire teacher certification in the State of Florida.

43 hours minimum:

Art Education (13) Electives (18)

Foundations in Education (12)

All programs are planned by student and graduate adviser. An integrative project is required.

English Education (AEN)

Master of Arts (M.A.)

Admission Requirements

1. Undergraduate degree approved by program advisor
2. A substantial number of undergraduate hours in English

Course Requirements A minimum of 33 hours

Comprehensive Examination Required in both English and English Education

See "Program Plans of Study," page 100.

Other graduate degrees in Curriculum and Instruction with emphasis in English Education are available (M.Ed., Ed.S.). A general description of these programs appears above. For more information, contact the department.

Foreign Language Education (AFE) (French, German, Spanish)

Master of Arts (M.A.)

Admission Requirements

1. Undergraduate degree approved by program advisor
2. Fluency in English and a foreign language

Course Requirements A minimum of 33 hours

Comprehensive Examination

See "Program Plans of Study," page 99.

Master of Education (M.Ed.) The M.Ed. degree in Curriculum and Instruction is available with emphasis in Foreign Language Education. Additional details may be obtained by contacting the department.

Instructional Technology

The graduate program in Instructional Technology prepares professionals to work with computers in a variety of instructional settings. It provides a wide range of experience in microcomputer hardware, software, and the educational applications of computers. An M.Ed. in Curriculum and Instruction, with an emphasis in Instructional Technology, is available. In addition, instructional technology cognates are available for other graduate level programs.

Admission Requirements SEE PAGES 13-16, 99-102 for general requirements.

Special requirements

1. Two years of relevant educational or professional experience as judged by the program faculty.
2. Approval by the department.

Course Requirements

1. 21 hours in instructional technology: from among EME 5403, EME 6412, EDF 6284, EME 6425, EME 6426, and CGS 6210.
2. 3 hours in graduate curriculum and instruction (EDG 6627).

3. 12 hours in foundations of education (EDF 6432, EDF 6481, EDF 6215, and EDF 6517 or EDF 6544 or EDF 6606 or EDF 6736).

Comprehensive Examination The comprehensive examination will consist of a written and/or oral examination covering both theoretical and applied objectives within the degree program.

Mathematics Education (AMA)

Master of Arts (M.A.) This M.A. degree in Mathematics Education is designed mainly for high school teachers.*

Admission Requirements SEE PAGES 13-16, 99-102.

Special requirements

1. Undergraduate degree in Mathematics Education or a degree with a strong background in mathematics
2. Recommendation from the Departmental Admissions Committee

Course Requirements A minimum of 33 hours.

1. 18 hours in mathematics approved by the student's advisor
2. 9 hours in foundations of education: EDF 6432, EDF 6481, and EDF 6211 or 6215
3. 3 hours in current trends in secondary school mathematics (MAE 6136)
4. 3 hours of electives in mathematics education

Comprehensive Examination The comprehensive examination will consist of a written and/or oral examination in the major area.

*An M.A. degree (EDE) designed to improve the skills of the classroom teacher in teaching mathematics to elementary school students is also available. Contact the Dept. of Childhood/Language Arts/Reading Education for information.

Other graduate degrees in Curriculum and Instruction with emphasis in Mathematics Education are available (M.Ed., Ed.S., Ph.D.). A general description of these programs appears above. For more information, contact the department.

Science Education (ASC)

Master of Arts (M.A.) This M.A. degree (SCE) in Science Education is designed mainly for high school teachers.*

Admission Requirements SEE PAGES 13-16, 99-102 for general requirements.

Special requirements

1. A strong background in science

Course Requirements A minimum of 33 hours.

Comprehensive Examination

*An M.A. degree (EDE) designed to improve the skills of the classroom teacher in teaching science to elementary school students is also available. (Contact the Dept. of Childhood/Language Arts/Reading Education.)

Other graduate degrees in Curriculum and Instruction with emphasis in Science Education are available (M.Ed., Ed.S., Ph.D.). A general description of these programs appears above. For more information, contact the department.

Social Science Education (ASO)

Master of Arts (M.A.)

Course Requirements Plan I A minimum of 33 hours

Course Requirements Plan II A minimum of 50 hours

Comprehensive Examination

Master of Education (M.Ed.) The M.Ed. degree in Curriculum and Instruction is available with emphasis in Social Science Education. A general description of the program appears above. For more information, contact the department.

Theatre Education

Master of Education (M.Ed.) This program is designed to serve the needs of certified teachers who have not completed a degree in theatre (particularly those certified in

Speech or English). The courses of study are designed to provide the teacher with a minimum of knowledge and experience considered necessary for a drama teacher.

Admission Requirements SEE PAGES 13-16, 9-102 for general requirements.

Course Requirements

Curriculum and Instruction: 15 hours These may be taken at any USF branch campus during any semester (up to 6 hours may be transferred).

Theatre Education: 17-18 hours. Up to 14 hours may be taken during the summer session; however, 4 courses (12 hours) will be offered **only** during the summer session. Theatre courses include:

THE 5909 THE 5931 EDG 6329 THE 6736
EDG 6457

Descriptions of the two THE courses may be found under the College of Fine Arts.

Department of Special Education

The programs of study in the Department of Special Education prepare special educational leaders in public and private schools and in state, federal, or community settings at the master's and doctoral levels. Specific areas of training include behavior disorders, gifted, mental retardation, specific learning disabilities, and varying exceptionalities. The master's programs emphasize consultative, supervisory, and multidisciplinary skills intended for students who wish to assume innovative leadership roles in public or private school settings. The doctoral program prepares students for research, teacher training, and leadership roles.

After admission to a program, the candidate and the department adviser together chart a program of study incorporating both core requirements and courses of specific interest to the student. All programs stress field based experiences: practica and internships. Students provide their own transportation to practicum and internship sites.

The College of Education also offers an Educational Specialist (Ed.S.) degree in Curriculum and Instruction with an emphasis in Special Education. Admission to this program has been limited in recent years. Persons interested in this degree should contact the Chair of the Department.

Master of Arts In Special Education

The M.A. program in special education is a 36-hour program, designed for students holding a valid Florida teaching certificate in special education. A minimum core of 24 hours is taken in special education with field work and course work also required in certification areas.

Students without undergraduate certification in special education are also admitted, but they are required to take prerequisite courses in education in order to be certified at the master's level. Departmental advisors assist students in determining the courses that will be required for certification purposes.

Students may select one of two scheduling options. Evening courses are offered during the fall, spring, and summer semesters. Students selecting this alternative usually take one or two courses a semester and complete their program of study within two to four years. With this option, students are required to take courses two of the three semesters each year and they must complete their program of study within 7 years of their admission date.

Alternatively, students may enroll in the School-based Teacher Education Partnership (STEP) Program, a scheduling option that enables students to complete their degree within 14 months by attending two intensive summer school sessions plus week-end and evening courses during the intervening academic year. This option is designed for employed teachers, but is open to students without teaching credentials. Students selecting this option are only admitted during the Spring semester for summer matriculation. In this option, students remain with a cohort of approximately 20 students for the entire program of study.

Course Requirements**a. Process Core**

EDF 6481

b. Program Core

EEX 6025*

EEX 6616

EEX 6222

EEX 6245

EEX 6732

EEX 6939

EEX 5752

EEX 6248

* Not required, if equivalent course taken in undergraduate program.

c. Specializations

Behavior Disorders

EED 6201

EEX 6943

Specific Learning Disabilities

ELD 6015

EEX 6943

Mental Retardation

EMR 6052

EEX 6943

Varying Exceptionalities

EED 6201

ELD 6015

EMR 6052

EEX 6943

d. Electives

For students seeking certification in Behavior Disorders, Learning Disabilities, and Mental Retardation 3 to 6 hours of coursework relevant to the student's program of study are required and must be approved by the student's advisor.

Admission Requirements SEE PAGES 13-16, 99-102 for general requirements.

Special Requirements for the STEP Program

Candidates seeking matriculation in the STEP Program should apply by March 1. Students are admitted to this program annually. Because the STEP Program is an intensive master's-level program, additional admission requirements are necessary:

1. Evidence of successful professional/paraprofessional experience working directly with children, or a successful interview with the Admissions Committee of the Department of Special Education.
2. Submission of two letters of recommendation. These should be from persons who have seen the applicant working with children, and/or from persons who can attest to the applicant's ability to do graduate work (former professors).

Master of Arts In Gifted Education

The Gifted Child Teacher Training program is a 36 hour program of study that provides advanced training for certified teachers to work with gifted and talented children and to work with other teachers on a consultant or teacher-leader basis. Emphasis is placed on developing specific skills in identification of gifted students, assessing individual student's cognitive and affective strengths and weaknesses, modifying educational programs to develop gifted student's potential, and consulting with gifted students, their families, and teachers.

Admission Requirements SEE PAGES 13-16, 99-102 for general requirements.

a. Process Core

EDF 6481

b. Program Core

EEX 6025

EEX 6222

EEX 6939

c. Specialization (18 hours)

EGl 5051

EGl 5325

EGl 6232

EGl 6943

EGl 6939

EGl 6416

d. Electives (6 hours)**Certification Students**

Courses are offered for students who are seeking certification in special education. Students may enroll in these courses as non-degree seeking students. Since some of the certification courses do not apply to the master's degree, special students who are considering application to the master's program are encouraged to seek advisement early in their studies.

Doctor of Philosophy (Ph.D.) The Ph.D. in Curriculum and Instruction with specialization in Special Education is an individualized, personally mentored, systems research and development program in which students develop an array of skills necessary for either a university faculty position, or a leadership career in special education.

Admission Requirements SEE PAGES 13-16, 99-102 for general requirements.

Special requirements

1. A master's degree in special education or a related field.
2. Grade point average of 3.5 at the graduate level.
3. A Graduate Record Examination Composite Score (Verbal and Quantitative) of 1100 or higher.
4. A two-year work experience in special education or in a closely related field.
5. Favorable recommendation of the Department Advanced Graduate Admissions Committee and the department chairperson.

Program Requirements The Ph.D. program of study is a full-time commitment. The program is individually planned by the student and a faculty advisory committee and approved by the department chairperson. The program of study involves a minimum of 83 hours of coursework and includes, but is not limited to, the following:

a. Special Education coursework (21 hours)

Required:

EEX 7301 EEX 7341 EEX 7741

The remaining hours in Special Education are to be selected from the following:

EEX 7203 EEX 7841 EEX 7911

b. Dissertation (See page 103 for Dissertation Hours Requirement)

c. Cognate Area (12 hours)

d. Statistics/Measurement/Research (12 hours)

e. Foundations (8 hours)

f. Language/Computer Science (non-credit)

Doctor of Education (Ed.D.) The Special Education Department offers an Ed.D. in Educational Program Development, with specialization in Special Education Administration and Supervision. The program's mission is to prepare administrators at the doctoral level to effectively lead and manage programs for special education and at-risk populations.

Admission Requirement SEE PAGES 13-16, 99-102 for general requirements.

Special requirements

1. Certification in special education, educational leadership, or a related field (exceptions will be considered by the Department of Special Education Graduate Admissions Committee and the Department Chairman).
2. Minimum of three years successful experience as a professional working with identified exceptional students.
3. Favorable recommendation of the Department of Special Education's Advanced Graduate Admissions Committee and the Department Chairperson.

Program Requirements: Students enrolled in this non-certification program should possess certification in special education, educational leadership, or a related field. Though full-time enrollment is strongly encouraged, "flex-time" enrollment is permissible. The program is individually planned by the student and a faculty advisory committee and approved by the department chairperson. The program of study involves a minimum of 83-84 hours of coursework as follows:

a. Specialization (specialty studies, curriculum, and tools) (30)

Required

EDA 6192 EDG 7692 EDG 7667 EEX 7301

EEX 7841 EME 6425

Elective

EDA 6061 EDA 6106 EDA 7222 EDA 7233

EDS 6050 EEX 6511 EEX 6526 EEX 6939

EEX 7341

b. Dissertation (30)**c. Foundations (12)**Required

EDF 7245

EDF 7655

Elective

EDF 7649

EDF 7682

d. Measurement/Statistics/Research Design (11-12)Required

EDF 6407

EDF 7408

Elective

EDF 7410

EDF 7437

EDF 7484

EDF 7493

EDG 7931

ANT 7760

Student Organizations and Activities

College of Education Student Council (CESC) The College of Education Student Council is the parent organization for all Student Education organizations, and is open for membership to all interested enrolled Education majors. The student organizations sponsor, and the CESC officers make an annual budget for the approval of monies funded by the State.

The CESC is responsible for helping to develop new College of Education organizations, to provide leadership, and to distribute information for projects. The Council is composed of CESC officers, nine senators to Student Government and area representatives, one representative from each of the 11 organizations in the College of Education, and its members.

Childhood Education Organization (CEO) The CEO is a non-profit professional organization concerned with the education and well-being of children two to twelve years of age. Members come from all over the United States.

The USF chapter works directly with children through observation, projects, and programs. In addition, it provides opportunity for students to attend study conferences throughout the state of Florida, which allows the student an opportunity for professional growth and exchange of professional ideas. Membership is open to all students concerned with children two to twelve years old.

Student Council for Exceptional Children The Student Council for Exceptional Children is an organization of students interested in the education of the exceptional, or "different", child. Various exceptionalities included are gifted, emotionally disturbed, physically handicapped, mentally retarded, and culturally different.

Activities of the USF chapter include field trips to various special educational facilities, prominent speakers, seminars, state and national conventions, and social events. The specific activities are determined by the members and the exceptions in which they are interested. All interested students are invited to join.

Student Music Educators National Conference Student Music Educators Conference is an affiliate of the Music Educators National Conference and the Florida Music Educators Association. It is devoted to the expansion of knowledge and understanding of music education on all levels. Membership is open to any student in the University of South Florida who is interested in the teaching of music.

Student National Education Association The SNEA is designed to provide professional growth opportunities, leadership training, and membership benefits available to other members of the National Education Association, including \$1 million liability insurance coverage while engaged in student teaching (internship). Membership is open to all students who have been admitted to the College of Education.

Student Counselor Education Organization This is an organization for graduate students presently enrolled in the Guidance program. Social and professional meetings are conducted throughout the year. Members also participate in annual retreats and attend district and state meetings.

Mathematics Education Club The Mathematics Education Club is mission-oriented; it is primarily concerned with children and youth who evidence learning problems in mathematics. However, an important purpose of the club is also to develop hypotheses that can result in generalized professional knowledge that improves the teaching and learning of mathematics.

Clinical, correlation, normative, and experimental approaches are used in the study of the etiology and symptomatology of mathematical learning disabilities. General

models and specific teaching strategies are provided the classroom teacher and the student-clinician for implementing effective diagnostic and prescriptive programs.

Close professional relations are maintained between the Mathematics Education faculty and the appropriate faculties in the College of Education whose interests and professional skills are related to the work of the club.

Association of Library and Information Students (ALIS) This is a professional organization associated with the School of Library and Information Science and is open to all members of the University community interested in librarianship.

The USF group provides programs and guest speakers of interest to the campus community and publishes a newsletter for its members. It is the official voice of students in the school, and members of the association are included on faculty-student committees within the school.

Minority Organization of Students in Education The Minority Organization of Students in Education is organized to provide experience and opportunities that will facilitate the educational professional growth of its members.

Delta Pi Epsilon Delta Pi Epsilon is a national honorary professional graduate society for men and women in business education. Objectives of the society include encouraging and recognizing exceptional research achievement, publishing/research in business education, and promoting professional development of its members. The Gamma Rho chapter at USF was installed in April 1984.

The Delta Epsilon Pi of America (DECA) DECA is an integral part of the Distributive and Marketing Education and Marketing Teacher Preparation program at the University of South Florida. It provides Distributive Education majors with leadership opportunities, social experience, learning activities, and professional involvement. Participation in the activities of Collegiate DECA is encouraged for graduate students.

Kappa Delta Pi Kappa Delta Pi is an international co-educational honor society in education. The society was founded to recognize and encourage excellence in scholarship, high personal standards, improvement in teacher preparation, and distinction in achievement.

Phi Beta Lambda Phi Beta Lambda is a business fraternity open to all students expressing an interest in business. The emphasis is on promoting free enterprise and instilling leadership qualities.

COLLEGE OF ENGINEERING

The College of Engineering graduate activity is provided by six departments. Each is responsible for an area of engineering disciplines and the supervision of one or more academic programs. Students are assigned to a specific academic program in a specific department. In addition to the centralized facilities of the college, departments are equipped with their own specialized laboratories and equipment related to their disciplines. The following sections provide more information on the engineering disciplines, academic programs, and resources of each department. For additional information on a specific department, request a copy of the department's Graduate Student Handbook from its Graduate Program Coordinator.

Graduate Degree Programs

The College of Engineering offers graduate programs in both Engineering and Applied Sciences to meet the diverse demands of the future.

This spectrum of program offerings provides the prospective student with a choice of avenues, depending upon individual interests, career objectives, and capabilities for significant technological contributions. These programs are described in detail under their respective Catalog headings.

Laboratory experience, as well as real-world participation in technological problem-solving, is a key aspect of a professional engineer's college education. The College of Engineering, in addressing this need, augments its own modern laboratory and research facilities by close contact with professional societies and the many industries in the metropolitan Tampa Bay area and beyond.

Students interested in particular programs offered by the College of Engineering should direct their inquiries to the specific department or to the Associate Dean for Academic Affairs of the College of Engineering.

Master's Degree Programs in Engineering

- *Master of Science in Chemical Engineering (M.S.Ch.E.)
- *Master of Science in Civil Engineering (M.S.C.E.)
- *Master of Science in Computer Engineering (M.S.Cp.E.)
- *Master of Science in Computer Science (M.S.C.S.)
- *Master of Science in Electrical Engineering (M.S.E.E.)
- *Master of Science in Engineering (M.S.E.)
- *Master of Science in Engineering (Manufacturing Option) (M.S.E.)
- *Master of Science in Engineering Management (M.S.E.M.)
- *Master of Science in Engineering Science (M.S.E.S.)
- *Master of Science in Industrial Engineering (M.S.I.E.)
- *Master of Science in Mechanical Engineering (M.S.M.E.)
- *Master of Civil Engineering (M.C.E.)
- *Master of Engineering (M.E.)

The master's degree is awarded for advanced study beyond the baccalaureate degree within an area of specialty. The College of Engineering offers several programs leading to degrees at the master's level. These programs can be divided into Engineering-oriented and Engineering Science programs.

The Engineering-oriented degree programs offered by the college are: The Master of Science in a designated engineering field, the post-baccalaureate Master of Science in Engineering program, the Master of Engineering program, and the Five-Year Program leading to the simultaneous award of both the bachelor and master's degree. Each department determines the degree to be awarded, depending upon the student's background and specific program of study pursued.

Master of Science In Designated Engineering Field See previous list of designated fields. For further information on sub-specialization, see information for each department on the following pages.

Master of Science in Engineering

The Engineering Science degree program includes a combination of engineering principles and their application to such varied fields as physical sciences, life sciences, social sciences, environmental sciences, applied mathematics, and bio-medical engineering. A strong foundation in rigorous scientific and engineering principles and practice is expected. The Master of Science in Engineering Science is awarded for this program of study.

Each department in the College is authorized to offer the Master of Science in Engineering Science and the Master of Science in Engineering. These degrees are individually tailored to student needs.

Manufacturing Option In addition, the departments of Chemical Engineering, Computer Science and Engineering, Electrical Engineering, Mechanical Engineering, and Industrial Engineering offer a Master of Science in Engineering with a Manufacturing Systems Option (consisting of an 18 hours core and 15 hours of electives). The degree is administered by the Industrial Engineering Department and is a true interdisciplinary degree with areas of Robotics, Automation, Computer Aided Design, Computer Integrated Manufacturing, Control Systems, Software Systems, Hardware Systems, and Production Systems available for emphasis.

The student, upon completion of the core courses, may choose electives and concentrate within one of the above departments or may choose to acquire an in-depth knowledge in one of the above emphasis areas by making elective course choices from several departments.

General Entrance Requirements Admission to a master's program is dependent upon a favorable evaluation by the department to which the student is applying. Applicants are expected to meet the minimum requirements of the University (SEE PAGES 13-16) and those of the College. Individual departments may have additional specific and higher requirements. More complete information may be obtained from the Graduate Programs Coordinator for the specific department.

Except when additional requirements are noted, all master's programs in the College of Engineering have the following entrance requirements:

1. A baccalaureate degree in Engineering from an ABET accredited program or CSAB accredited program for Computer Science is generally required for graduate work in the same designated field. However, due to differences in undergraduate programs at different universities some remedial work may be required for students with undergraduate degrees from other schools. Degrees in Mathematics, Physics, Chemistry, and other fields may be accepted on an individual basis. In such cases, it is probable that supplemental remedial work in engineering will be necessary.
2. Those who do not meet the regular requirements may (with prior approval of the appropriate department chairperson) attempt a trial program as a non-degree seeking student. Up to 12 hours of satisfactorily completed department specified work attempted on this basis may be accepted into a graduate program. Before attempting such a trial program, the student should obtain from the departmental adviser a list of courses and performance criteria for admission. Individual departments may allow fewer than 12 hours of course work taken as a non-degree-seeking student to transfer into a graduate degree program.
3. Students whose native language is not English must have a score of at least 550 on the TOEFL exam.

General Program Requirements Requirements for graduate degrees from the College of Engineering consist of University requirements, College requirements and Departmental requirements. For University requirements refer to the chapter on Academic Policies and Procedures. College requirements are listed below. Refer to the following sections for requirements of each department.

College of Engineering Requirements for Master's Degree:

1. A thesis program must contain a minimum of 24 credit hours of coursework and a minimum of 6 credit hours of thesis.
2. Non-thesis program requirements vary according to department but must contain a minimum of 30 credits of approved coursework.
3. Students must maintain an overall grade point average of 3.0. No grade below "C" will be accepted in a graduate program. If a student's average falls below 3.0, the student will be placed on probation and must obtain a directed program from the appropriate adviser, and approval by the Engineering Associate Dean for Academic Affairs, prior to continuing coursework for a degree.
4. All students are required to pass a final oral or written comprehensive examination prior to receiving the degree. These examinations are arranged and administered by the student's department.

Five-Year Programs Leading to Bachelor and Master Degrees Students who, at the beginning of the senior year, clearly are interested in graduate study are invited to pursue a five-year program leading simultaneously to the Bachelor of Science in Engineering or Engineering Science and Master of Science in Engineering or Engineering Science degrees. The keys to this program are:

1. A two-year research program extending through the fourth and fifth years.
2. The opportunity to take graduate courses during the fourth year and deferring senior courses to the fifth year. The requirements of the combined degrees do not differ from those for the two degrees pursued separately.

Students apply for admission to this program through their advisers, who should be consulted when additional information is needed. General requirements include:

1. Senior standing (90 credits) with at least 16 upper-level engineering credits completed at the University of South Florida with a 3.0 GPA.
2. A minimum score of 1000 on the GRE.

Doctoral Programs

The Doctor of Philosophy degree is awarded in recognition of demonstrated scholarly competence and ability to conduct and report original and significant research. Unlike the baccalaureate and master's degrees, the Ph.D. degree cannot be earned by an accumulation of course credits over a period of residence alone. After adequate fundamental preparation to gain competence, the student must demonstrate research capability through completion of an authoritative investigation in the chosen engineering field, culminating in a written dissertation. The dissertation must demonstrate that the student possesses the ability to reason logically, the talent for engaging in significant and original research, and the ability to organize and present conclusions in a professional manner.

The doctoral degree programs offered by the College of Engineering are as follows:

- *Doctor of Philosophy in Chemical Engineering
- *Doctor of Philosophy in Civil Engineering
- *Doctor of Philosophy in Computer Science and Engineering
- *Doctor of Philosophy in Electrical Engineering
- *Doctor of Philosophy in Engineering Science
- *Doctor of Philosophy in Industrial Engineering
- *Doctor of Philosophy in Mechanical Engineering

Admission Requirements SEE PAGES 13-16.

1. An undergraduate degree in the respective Engineering or Computer Science discipline.
2. Applicants from other disciplines, non-ABET accredited programs, or foreign institutions may be considered for admission; however, they will be required to engage in additional coursework to develop proficiency equivalent to an undergraduate of the discipline in which the student pursues graduate work. The exact number of hours of such remedial work will be determined by the major department.

3. Individual departments may have higher than college standards.
4. Students whose native language is not English must have a score of at least 550 on the TOEFL exam.

Program Requirements

1. An adviser will be appointed by the chair of the appropriate department or program for each student during the first semester of registration at the University of South Florida. The adviser will help determine the student's area of research interest and will delineate preliminary course assignments. At the earliest possible date, a major professor will be appointed and a supervisory committee formed. This committee will monitor the student's program of studies and has full responsibility for conducting the student's qualifying examination. The Supervisory Committee consists of a minimum of five members. One member of the committee must be outside the College of Engineering. (The requirement may be waived if special reasons exist and prior approval is obtained from the Engineering Associate Dean for Academic Affairs.) A majority of the committee will be from the College of Engineering, with at least two departments of the college represented.
2. A minimum of 60 hours of coursework beyond the baccalaureate degree plus a minimum of 20 hours of dissertation research is required. Total hours of credit must equal or exceed 90 hours. A minimum of 27 hours coursework in an engineering area of concentration is required. The 27 hours need not be coursework in the same department, but must focus directly upon the areas of concentration; at least 20 hours must be at the 6000 level. In addition, a minimum of 8 hours of mathematics or statistics is required. Engineering Mathematics may be approved by the committee if appropriate. Also, a minimum of 8 hours of coursework as defined by the committee outside the major area of concentration is required. Further requirements may be imposed by the candidate's committee.
3. Throughout the student's program of study, independent learning will be emphasized. For the first time in the participant's career, in most cases, the student will be responsible for mastering a new domain of knowledge without the aid of organized lectures and textbooks. The principal information source will be current literature. Such experience is a necessary preparation for a meaningful career in engineering and other fields where the professional must keep pace with a large, ever-changing body of knowledge.
4. All prospective candidates must pass a Ph.D. diagnostic examination that includes an area of mathematics and a prescribed area of concentration. This examination must be taken after the student has completed appropriate studies, usually equivalent to one year's coursework. Students entering with a master's degree must take this examination before the end of the first year after admission to the program.
5. A written and oral qualifying examination, conducted by the supervisory committee, will be taken by each Ph.D. student as soon as a substantial majority of coursework is completed. Completion of this examination and the Tools of Research admits the student to candidacy.
6. Students must be admitted to candidacy before they register for dissertation. Before admission to candidacy, students must have: a) passed the diagnostic examination of paragraph 4; b) passed the qualifying examination of paragraph 5; c) demonstrated proficiency in written and spoken English; d) satisfied the Tools of Research requirement; e) been accepted by a department faculty member credentialed to serve as chair of the dissertation committee. It will be the responsibility of the Ph.D. committee for each doctoral student to define the Tools of Research requirement within 2 months after committee formation. It is the responsibility of the Supervisory Committee to certify by letter to the Engineering Associate Dean for Academic Affairs that this has been completed, and the committee shall specify that the Tools/Skills of the candidate are applicable and sufficient for the field of proposed study.

7. The student must carry out an investigation resulting in an original and significant contribution to the knowledge in the field of research. The requirement of uniqueness means that the dissertation research will provide an important creative experience for the student. As the final stage of the student's program, the candidate must prepare a written dissertation covering the research. Students in the Ph.D. program must take an appropriate number of doctoral dissertation credits, but not less than 20 hours; the exact number is determined by department and/or individual requirements.
8. Once admitted to candidacy students must enroll for a minimum of 2 credit hours each semester of the academic year until completion of program.
9. The defense of the dissertation will conform to the University's general rules and regulations.
10. Minimum residency requirements may be satisfied by completing at the University of South Florida, beyond the master's degree or equivalent, the following: (1) the University's minimal requirement, or (2) 24 hours in one calendar year, or (3) 30 hours in no more than four semesters within a period of three calendar years. Any graduate work counted toward the fulfillment of the requirement for the Ph.D. degree after admission to candidacy must be accomplished within 7 calendar years.

Doctor of Philosophy in Designated Engineering Field Degree This degree is awarded to students pursuing a program in one of the following Engineering disciplines: Chemical Engineering, Civil Engineering, Computer Science and Engineering, Electrical Engineering, Industrial Engineering, and Mechanical Engineering. Students receiving this degree must demonstrate a thorough foundation in the designated discipline.

Doctor of Philosophy In Engineering Science Degree This program is designed to meet the needs of students who wish to pursue doctoral studies in interdisciplinary areas closely related to engineering. Generally, students in this program are expected to gain proficiency in two disciplines: an area of science and an area of engineering. Consequently, this program is administered jointly by two departments who cooperate in monitoring the student's program of studies, examinations, and dissertation research. To derive maximum benefit, the student's dissertation committee should be constructed to draw on the expertise of the cooperating departments in Engineering and Natural Science or other appropriate discipline.

Chemical Engineering

The department offers graduate degrees leading to M.S. and Ph.D. in Chemical Engineering. The professional degree, Master of Engineering, is also available. The Chemical Engineering program has faculty members with interests in a number of research areas, ranging from classical topics in Chemical Engineering, (e.g. thermodynamics, transport phenomena, process control, and process design), to current research areas, (e.g. computer-aided process design and optimization, super-critical extraction, polymeric materials and biomedical/biotechnology). Other areas of current research include applications of artificial intelligence to chemical engineering problems, computer data acquisition and analysis, development and characterization of polymers for special application, process control, protein denaturation/renaturation kinetics, application of thermodynamics to problems in biological and medical sciences, and development of on-line sensors for process parameter measurements and development of super-critical extraction techniques.

The department offers Chemical Engineering graduate courses in transport phenomena, reactor design, thermodynamics, applied mathematics, computer-aided process design and optimization, electrochemistry, advanced separation, process controls, polymer reaction engineering, and biotechnology.

Chemical engineering research facilities include an electron particle counter, an image analysis system, a mass spectrometer, a differential scanning calorimeter, a UV system, a super-critical fluid processing laboratory, a surface characterization system, and a

collection of HPLC and gas chromatographs. Controls and computer-aided process engineering laboratories include a TDC 2000 control system, programmable logic controllers laboratory, micro computers, SUN workstations, graphic capabilities, and a rich variety of software for statistical analysis, numerical analysis, optimization, flowsheet simulation, and artificial intelligence applications. The department also has access to a SEM and an X-ray diffraction unit.

Strong collaboration with the Chemistry, Biology, Industrial, Civil, Mechanical, and Electrical Engineering Departments makes research programs in Chemical Engineering truly interdisciplinary.

Civil Engineering and Mechanics

The Civil Engineering and Mechanics Department offers graduate programs at both the master's and Ph.D. levels.

The following areas of study are available: (1) Engineering Mechanics, (2) Environmental Engineering, (3) Geotechnical Engineering, (4) Materials Engineering and Science, (5) Structural Engineering, (6) Transportation Engineering and Planning, and (7) Water Resources Engineering. All graduate courses are offered in the evening.

The field of Civil Engineering has long been known for its breadth and ability to adapt to the new technological needs of society. The traditional areas of public works, such as highways, bridges, water supply, building design, and wastewater treatment, remain very important. In addition, the modern area of managing the environment has been included in the Civil Engineering domain. Graduates of the programs are prepared for careers with public agencies or private industry and firms involved in planning, design, research and development, or regulation.

College computer facilities are available to all departmental students. In addition, the department has a variety of microcomputers available for student use. The department has a high bay structures laboratory, which includes an MTS 250 kip testing machine. There are also well equipped environmental, soils, and hydraulics laboratories. These laboratories include equipment such as an ion chromatograph, atomic absorption unit, environmental chamber, constant rate of stress consolidometer, and triaxial units.

The Center for Environmental Studies and Engineering is headquartered in the department; however, its significant strength is the diversity of additional participants from the Departments of Chemical Engineering, Biology, Chemistry, Geology, and Environmental and Public Health. Faculty work together on distinctive research projects; the interdisciplinary approach gives students a unique breadth of experience. Cooperative efforts extend to course and program offerings that educate students in the wide variety of fields that are integral to environmental management.

The Center for Modeling Hydrologic and Aquatic Systems (CMHAS) is an integral part of the department. Formerly the Center for Mathematical Modeling, the Center has contributed significantly to water resources research since the early 70's. The CMHAS's charge is to perform fundamental and applied research towards developing, maintaining, and upgrading mathematical models used to study, design, and manage hydraulic, hydrologic and receiving water (inland and coastal) systems. Undergraduate and graduate students actively participate in this research while pursuing degrees in water resources disciplines of civil engineering. In cooperation with Engineering Computer Services, the Center maintains the most up-to-date computational resources (hardware and software) available for student use in the College.

The Department offers the following graduate degrees: M.E., M.S.E., M.S.C.E., M.C.E., and Ph.D.

The M.S.C.E., and M.S.E. are research oriented degrees where the student defines, examines and reports in depth on a subject area relevant to engineering as a major part of the degree requirements. The purpose of the thesis is to instill in the student the ability to inspect, evaluate, and report on a subject of interest to the engineering profession. The programs consist of a minimum of 24 credit hours of coursework and 6 credit hours of thesis or a minimum of 27 hours of coursework and 3 credit hours of engineering project. Students with undergraduate Civil Engineering degrees from an ABET accredited program will receive a Master of Science in Civil Engineering (MSCE)

degree while students who do not have an ABET accredited undergraduate Civil Engineering degree will receive a Master of Science in Engineering (MSE) degree.

The Master of Civil Engineering (M.C.E.) degree provides an option for those students who desire a designated degree oriented toward the professional practice of Civil Engineering. The M.C.E. emphasizes both design and non-technical aspects of engineering practice. The M.C.E. degree requirements consider the applicant's total education from college entrance through the master's degree program. It differs from the M.S.C.E. and M.S.E. degrees by requiring (1) a minimum of 18 credit hours of design coursework, (2) study in non-engineering areas related to professional practice, such as management, administration, public policy, technical communications, and environmental studies, (3) participation in the Fundamentals of Engineering Examination as a first step toward professional registration, and (4) a minimum of six months work experience or internship prior to receipt of the M.C.E. degree. The Department of Civil Engineering and Mechanics, in cooperation with the Florida Section A.S.C.E., will assist students in locating suitable employment to satisfy the work experience requirement. The internship may be satisfied before, during, or following the academic requirements.

The Master of Engineering, (M.E.), degree provides a student with the opportunity of obtaining an advanced degree by coursework only. The minimum coursework requirement for the M.E. degree is 33 credit hours. This degree is intended for students who will have had at least two years of Civil Engineering related work experience prior to completion of degree requirements. The work experience should include the preparation of engineering reports. The student's graduate committees may require documentation of report writing ability before approving this degree. This degree is recommended for part-time students who find it difficult to do a project or thesis research because of their work commitment. All of the Department's graduate courses are offered on weekday evenings which permits part-time and FEEDS students the opportunity to seek a graduate degree.

Certificate of Concentration In Solid and Hazardous Waste Management: Students wanting to focus their graduate study in the area of solid and hazardous waste management may pursue the Certificate of Concentration in Solid and Hazardous Waste Management, which would be awarded after completion of the Certificate of Concentration requirements and the Master's or Doctoral degree in the student's home department. This is an interdisciplinary program that supplements Departmental requirements to give the student unique understanding of this area. Further information is available from the Department.

Computer Science and Engineering

The department offers opportunities for study and research in all areas fundamental to Computer Science and Engineering. An excellent selection of courses and laboratories support undergraduate and graduate studies in computer engineering, software engineering, neural networks, computer algorithms, computer system organization, fault-tolerant computing, artificial intelligence, theory of computation, coding theory, expert systems, image processing, and computer graphics.

In addition to the vast array of college-wide computer facilities, the Department's facilities include a software laboratory equipped with a SUN SPARC workstations, image processing workstations, and an Intel Hypercube of 16 nodes, a graphics laboratory equipped with a graphicon 700 and several modern display devices, a substantial number of graphics-oriented personal computers, several AT&T 3B2 series systems, an Artificial Intelligence laboratory with dedicated workstations, a and a robotics and computer vision laboratory. The college-wide network consists of a number of SUN servers, workstations and several Ardent Titan Systems in various configurations. In addition, the University operates a large IBM Mainframe, which is available for the Department's instructional and research purposes.

Graduate students will find that their studies and research prepare them for making contributions in the computer field. Research interests of the department's faculty are diverse, including such areas as distributed and reliable computing, artificial intelligence,

fuzzy logic, machine learning, image processing, computer architecture, computer-aided design, robot intelligence, computer vision, graphics, application-oriented VLSI architecture, and coding theory. Consequently, students have a wide range of research areas available for theses and projects.

The department administers the master's degrees in Computer Engineering (M.S.Cp.E.) and Computer Science (M.S.C.S.), and a Ph.D. degree in Computer Science and Engineering. Students may select a thesis or non-thesis option for the M.S.C.S. or M.S.Cp.E. programs. Many graduate courses offered by the department are available to practicing engineers through the FEEDS (Florida Engineering Education Delivery System) program.

Electrical Engineering

The Department of Electrical Engineering of the University of South Florida offers degrees at the Doctoral and Master's level. The major areas of instruction in the department are circuits, controls, and systems; communications and signal processing; microwaves and high speed devices; microelectronics; and electric power systems. Occasionally projects in other areas such as modal analysis, computations, optimization, thermal management, or medical imaging are conducted.

The Department's research efforts are supported by well-equipped laboratories in the areas of compound semiconductors, electro-optics, IC design, noise and reliability, thin dielectric films, restructurable VLSI, communications and signal processing, and micro/millimeter waves. Extensive computing facilities are also housed in the College's new engineering building.

Current and previous Ph.D. dissertations explore the areas of microelectronics (materials and devices of elemental and compound semiconductors, circuit design, modeling, testing, and reliability); communications and signal processing (communication networks, packet switching, digital video and HDTV, ISDN, optical fiber communication, satellite communications, comm-software, comm-terminals, microprocessors and VLSI for signal processing); systems and controls; solid state material and device processing and characterization; electro-optics; electromagnetics, microwave and millimeter-wave engineering (antennas, devices, systems); CAD and microprocessors; and biomedical engineering.

Master's programs include options in the five major areas listed above. Other programs may be tailored for students with special interests. Non-thesis master's studies, comprising 33 credit hours, are available to practicing engineers through the FEEDS program.

Industrial and Management Systems Engineering

The department offers advanced degrees in areas of study pertinent to the design, evaluation, and operation of a variety of industrial systems, ranging from the analysis of public systems, to the service industry, to the operation of manufacturing concerns. Course topics and research opportunities include production planning, production control, facility design, applied engineering statistics, quality control and reliability, operations research, engineering economic analysis, human factors engineering, productivity analysis, manufacturing systems, robotics, automation, and computer applications.

The department has advanced laboratory facilities that support class projects and research in microcomputer applications, computer-aided design and manufacturing, automation, and applications in robotics. The departmental laboratories include two full-size industrial robots, CNC and DNC machine tool systems, manufacturing cell with industrial grade conveyor and ASRS equipment, table top robotic trainers, microcomputers, eye-tracking devices, physiological measurement devices, speech synthesis and voice recognition equipment, noise, vibration and illumination measurement devices, dynamic anthropometry equipment, and data collecting equipment.

The department administers the Master of Science in Industrial Engineering (MSIE), the Master of Science in Engineering Management (MSEM), and the Ph.D. with specialization in Industrial Engineering. The Department participates in the college's MSE, ME and MSES programs. Areas of concentration in the Masters and Doctorate programs include manufacturing systems, quantitative analyses and human factors. Course topics and research opportunities are in Production Planning and Control, Facilities Design, Applied Engineering statistics, Quality Assurance, Operations Research, Experts Systems and Manufacturing Automation.

The Master of Science in Engineering Management (MSEM) program is an off campus, part-time program designed to prepare practicing engineers from various disciplines to make the transition to the technical management track. The courses are offered via FEEDS in the late afternoon and evening hours at a number of industrial centers throughout the state. Courses in the program involve concepts in engineering management, resource management, strategic planning, and productivity. A minimum of 33 credits of approved coursework beyond the bachelor level is required, 18 credits of core work and 15 credits of electives. A thesis option is available to MSEM students who are interested in applied research. Up to 6 hours of advanced courses in the student's area of specialty may be taken as electives.

Specific questions pertaining to admission and program requirements may be answered by contacting the Industrial and Management Systems Department.

Master of Science in Engineering – Manufacturing Option

Each department in the College of Engineering is authorized to offer the Master of Science in Engineering Science and the Master of Science in Engineering. These degrees are individually tailored to the students needs.

In addition, the Departments of Chemical Engineering, Computer Science and Engineering, Electrical Engineering, Mechanical Engineering, and Industrial Engineering, offer a Master of Science in Engineering with a Manufacturing Systems option (consisting of 18 hours core and either 15 hours of electives or 6 hours of electives and a thesis). The degree is administered by the Industrial Engineering Department and is a true interdisciplinary degree with areas of Robotics, Automation, Computer Aided Design, Computer Integrated Manufacturing, Control Systems, Software Systems, Hardware Systems, and Production Systems available for emphasis.

The student may choose electives and concentrate in one of the above departments or may choose to acquire an in-depth knowledge in one of the above emphasis areas by making their elective course choices from several departments.

Mechanical Engineering

The Department offers graduate programs leading to the M.S. and Ph.D. in Mechanical Engineering. Coursework and research opportunities are available in the areas of fluid mechanics and aerodynamics, heat transfer, robotics (with an emphasis on automation, miniaturization and instrumentation), mechanical controls, vibrations, computer aided engineering, computational methods in structural mechanics, energy conservation, system simulation, and analysis of composite materials. Departmental laboratory facilities include main-frame, mini and personal computers, a wide assortment of basic instrumentation with A/D converters, a subsonic wind tunnel with laser-doppler anemometer, robotics sensors (acoustic and optical), engines, dynamometers, fluid flow/heat transfer equipment, vibrations instrumentation, and remote sensing and control instrumentation for data acquisition and energy management systems.

The department administers the Master of Science in Engineering (M.S.E.), non-thesis, the Master of Science in Mechanical Engineering (M.S.M.E.), thesis or project design, and the Doctor of Philosophy (Ph.D.). The M.S.E. degree is offered to full-time employees of local industry who take their coursework primarily via the FEEDS network.

Cooperation with Other Departments and Colleges

Advanced study and research challenges exist at the interfaces between engineering and other academic disciplines. Examples include surface physics and chemistry applied to semiconductor processing technology; semiconductor physics applied to VLSI and analog integrated circuit design, manufacture and quality control; chemical processing and its relation to chemical principles; environmental engineering and chemical identification of minute impurities; environmental and transportation engineering and its relation to public health and public administration; water resources engineering and geohydrology; and biomedical engineering, to name only a few. The College cooperates with other academic units of the University in research activities and selectively educates students to become proficient in such interdisciplinary fields. Degree programs associated with this effort are the M.S. in Engineering Science and the Ph.D. in Engineering Science.

Supporting Activities and Facilities

The College of Engineering supports its departments, academic programs, and research through a spectrum of common facilities and service activities described in further detail in the following sections.

College Facilities

In addition to the specialized laboratory facilities of the individual departments the USF College of Engineering maintains College facilities to support the teaching and research activities of all departments. These facilities include a machine shop, a scanning electron microscope facility and the computer facilities provided by Engineering Computing Services.

The Machine Shop, manned by expert model makers, includes welding facilities and machine tools to permit fabrication of devices for teaching and research from a wide range of engineering materials.

The Scanning Electron Microscopy facility houses a JEOL scanning electron microscope which can create a magnified image up to 300,000 times the original size. Also used is an energy dispersive X-ray analysis system which identifies and quantifies elements present in a sample. Any dry sample up to six inches in diameter can be placed in the chamber of the microscope to be magnified and photographed and/or analyzed for sample composition.

College Computing Facilities

The College of Engineering computing facilities are used to provide support for specialized engineering calculations above and beyond that which is available at the IBM based Central Florida Regional Data Center (CFRDC).

The College of Engineering operates a cluster of file and computer servers for students and faculty within the College. These consist of SUN servers and four Ardent multiprocessor minisupercomputers. The networks provide access from offices and laboratories, computer rooms and dial-in facilities. All machines are configured for E-mail, and access to Internet. Convenient links are available for access to the vector processor at CFRDC.

In addition to the network facilities, the College operates open access P.C. labs. Two are available for undergraduate engineering students; a third lab is reserved for graduate students and faculty.

The network facilities provide access either via Ethernet or ISN. Connections to offices, laboratories and classrooms are available on request, subject to budget priorities. The FEEDS studios are also networked to provide demonstrations for remote classes.

The College facilities run most of the standard engineering software. Languages include Fortran, Basic, Pascal, C, Ada, several varieties of LISP and Prolog. Applications software includes mathematical libraries, suites of programs for VLSI design, chemical process design, civil and mechanical engineering design, robotics simulation, and circuit simulation and analysis. There are high resolution color terminals for use in conjunction with these activities, and for mechanical design there are four

multiple display workstations with joysticks and digitized pads. Similar arrangements are used for VLSI design.

Additionally, the Computer Science and Engineering Department within the College runs other facilities, consisting of the three VAX machines, an Ethernet with SUN and AT&T 3B2 machines, and extensive microcomputer laboratories.

Florida Engineering Education Delivery System (FEEDS)

FEEDS is a cooperative effort among the Colleges of Engineering of the State University System of Florida. Primary (originating) centers, listed in order of the number of students served, include the University of South Florida, Florida Atlantic University, the University of Central Florida, the University of Florida, Florida International University and Florida A & M/Florida State Universities. Cooperating (distribution) centers include the Universities of North and West Florida.

This delivery system was developed in response to the needs of engineering companies to support engineers working in industry. These graduate engineers need access to quality graduate programs and extended studies in engineering. Florida's industrial, political, and educational leaders agree that ready access to the highest quality engineering education by professionals throughout the state plays an important role in the growth of high technology industry and in the economic and social health of all its people.

FEEDS provides access to degree programs and courses which reside in academic departments on campus. The courses available through FEEDS are selected from the graduate offerings on the campuses of the participating colleges of engineering.

The University of South Florida is currently the only institution with a live interactive television network. There are no less than thirty live sites, located mostly at corporate offices, which participate in classes from eight in the morning until nine at night. USF and the other colleges distribute video tape to all sites beyond the reach of the live signals. Students work for companies located from Pensacola to Miami.

Providing access to graduate degrees at off-campus affiliated locations is the primary purpose of FEEDS. Access is also provided for individuals who seek only graduate courses for the purpose of professional development. Courses are available in all engineering disciplines supported at USF. Individuals are served only at a cooperating university center or at affiliated corporate sites. Corporations may contact the Assistant Deans's Office in Engineering about becoming a FEEDS site.

Admissions, Advising, and Registration Since FEEDS is a delivery system providing access to campus programs, all campus admission and performance requirements apply to distance located students. Each student registering for a course delivered through FEEDS must be admitted to one of the primary universities as a degree or non-degree student. Application for admission may be made directly to USF's Office of Graduate Admissions or contact the FEEDS office. Prospective USF students must refer to the admissions procedures and requirements in this Catalog.

FEEDS Center and site procedures require that students registering for courses coordinate with an adviser prior to registration. All students (degree and non-degree) must register each semester for each course desired. Registration and advising occur at the remote site in most instances and registration for FEEDS sections through normal campus processes is not permitted. Contact the appropriate site director, nearest FEEDS university center, or the Assistant Dean's Office in the College of Engineering for information, schedules and procedures.

The Center for Microelectronics Research (CMR)

The Center for Microelectronics Research has the mission of executing state-of-the-art research in microelectronics materials, processes, devices, circuits and systems. The Center consists of research faculty with academic appointments in either the College of Engineering or the Physics Department, a full-time engineering research staff, and research assistants who are graduate students in academic departments. The faculty and staff have extensive experience in the development of semiconductor technology,

from device to circuit to systems development, as well as experience in the design, fabrication and test of advanced CMOS technology.

Established in 1986, the Center for Microelectronics Research (CMR) has grown to its full potential during the past couple of years with the acquisition of over 12 new faculty and staff engineers and an investment of over \$7,000,000 in six laboratory facilities. The core funding for CMR comes from the State of Florida, with outside research contracts tailoring the research focus.

Center for Urban Transportation Research (CUTR)

The Center for Urban Transportation Research was created by the Florida Legislature and USF to bring together the benefits of education and research to find solutions to current and future transportation needs. CUTR has built a program centered on innovative transportation financing, suburban mobility, and growth management to emerge as a leader in transportation research.

Since its establishment in 1988, CUTR has received over \$7 million in grants and contracts from private enterprise and local, state, and federal governments to perform innovative research on a wide variety of transportation-related topics. Several projects have been completed in cooperation with other Florida universities. The multi-disciplinary staff is composed of experts in finance, economics, engineering, planning, safety, public policy, and the environment. The staff integrates analytical capabilities with "real world" experience to develop comprehensive solutions for all modes of transportation and converts innovative ideas into concrete actions.

Graduate students from diverse educational backgrounds such as engineering, economics, and public administration who have an interest in transportation are employed as assistants to aid in ongoing research of the center. For more information, contact CUTR.

Florida Engineering and Industrial Experiment Station (EIES)

The Florida Engineering and Industrial Experiment Station developed from early research activities of the Engineering faculty at the University of Florida, and was officially established in 1941 by the Legislature. Its mandate is to "organize and promote the prosecution of research to such of these problems as are important to the industries of Florida." In 1977, the University of Florida extended the provisions of the Engineering and Industrial Experiment Station to the Engineering College of the University of South Florida and two other state engineering colleges. The Legislature supported this extension with an appropriation: the four colleges of engineering now work together in a joint effort through EIES to assist industry with special problems that can be appropriately solved by engineering colleges. During the academic year 1990-91, a sponsored research volume of approximately \$7 million passed through EIES (USF). All departments, faculty as well as students, contribute to this research at the University of South Florida. The direct exposure of students to real research needs of the state adds additional meaning and depth to the engineering education offered by the college.

NASA STAC (Southern Technology Application Center)

The NASA Southern Technology Applications Center (STAC) is a sophisticated network of information resources and technology transfer expertise devoted to providing high-quality service that entrepreneurs, researchers, high-tech professionals, and business managers need to survive in today's competitive climate.

Created by NASA and the State University System of Florida through the Colleges of Engineering to assist the private sector in commercializing technology, STAC has grown into a full-service technology transfer service which has access to more than 1200 databases worldwide, containing in excess of 500 million records. By using these databases and the expertise of STAC's professional staff, researchers and decision makers receive the most timely information on virtually any subject area -- from state-of-the-art developments to commercial applications of their innovative concepts. STAC's

on-line interactive searches retrieve a greater number of relevant documents than those obtainable through traditional research techniques.

STAC's diverse services satisfy the demand for automated information research, provide tailored reports to interpret data, create linkages between universities and industry for research and development activity, and assist in consultant recruitment. STAC provides the most current, accurate, and comprehensive information research available as well as technical assistance, expert connections, custom database development, demographic trends, patents and trademarks, business opportunities in space, SBIR grant assistance, and proposal writing seminars. Results are STAC's number one priority. STAC charges a minimal fee for its services since its operation is partially supported through NASA and state funds. The STAC office, which services the southwest area of Florida, is in the College of Engineering at the University of South Florida.

COLLEGE OF FINE ARTS

The College of Fine Arts provides opportunities for students to develop their interests and talents to the highest level possible, and encourages them to do so whether they wish to commit to a life in the arts or to develop appreciation for and involvement in the arts. For these purposes, the college educates in the practice of creating, performing, presenting, and understanding theatre, music, dance, and the visual arts.

Our mission is three-fold:

1. Teaching the disciplines for creating, performing, presenting, and understanding the arts. The college prepares students to:
 - a. Practice an art as a full-time life commitment;
 - b. Practice an art as an important element of the individual's life commitment;
 - c. Appreciate the arts as important life enrichers.
2. Creating and researching the arts:
 - a. To expand horizons and explore new dimensions in the arts;
 - b. To contribute to the expansion of general knowledge and information about the arts;
 - c. To improve the teacher's own effectiveness with students.
3. Serving the public by providing cultural enrichment and expertise.

In recognition of its academic and artistic achievements, the College of Fine Arts has been given program of emphasis status by the Board of Regents of the State University System. The college offers degree programs and courses in art, dance, music, and theatre. It also offers courses in Music Education and Art Education in cooperation with the College of Education.

Graduate Degree Programs

The College of Fine Arts offers four master degree programs:

***Master of Fine Arts (M.F.A.)**

Drawing, Painting, Sculpture, Ceramics, Graphics (Lithography or Intaglio), Photography, and Cinematography (film)

***Master of Arts (M.A.)**

Art History

***Master of Music (M.M.)**

Performance, Composition, Piano Pedagogy, Theory, Choral Conducting, and Band/Wind Ensemble Conducting

***Master of Arts (M.A.)**

Music Education (offered in collaboration with the College of Education)

Admission Requirements In addition to general University admission requirements and regulations governing graduate study, each program within the College of Fine Arts has its own requirements for admission. It is important that the applicant simultaneously seeks to satisfy these requirements along with those of the Graduate Admissions Office in order to meet all deadlines. Application for admission is made through the Graduate Admissions Office. When all required information is received by them, it is forwarded to the appropriate department or school in the College of Fine Arts for final processing.

Financial Aid Available to graduate students who show special potential for creative contribution to the profession are the University Graduate Fellowships and graduate assistantships, and fellowships. Students interested in assistantship positions should contact the Director of Graduate Studies early in the Spring for best consideration for the following academic year. Additionally, loans, grants and work programs are available to qualified University of South Florida students. Financial aid is granted on the basis of need, academic promise and character.

Visiting Artists Program The College of Fine Arts, recognizing the importance of maintaining an arts-filled environment as an integral part of the total learning experience it offers to students within the college and to the community at large, is critically aware that a truly comprehensive university performing arts and art exhibitions program must

include performances and related activities by internationally recognized artists and ensembles.

The list of prestigious artists who have been presented over the years by the College of Fine Arts is impressive and may be obtained from the academic unit of your area of interest.

Program Descriptions

Art

Master of Fine Arts (M.F.A.) The major concentrations, or areas of emphasis, available to graduate (M.F.A.) art students are: Drawing, Painting, Sculpture, Ceramics, Computer Art, Lithography and/or Intaglio, Photography, and Cinematography (Film).

Admission Requirements Students for the M.F.A. Program are admitted Fall Semester only. The application for admission to graduate study should be sent to the Graduate Admissions Office prior to deadline published in the Academic Calendar. However, the application and all support materials (See below) should be submitted early enough to reach the Art Department by February 15 for Semester I admission. **Incomplete applications will not be reviewed.**

At least one week should be allowed for internal processing of the applications. All transcripts should have been received and the applicant's GPA for the final 2 years of undergraduate work should be 3.0 or above. The GRE score must be available for a final decision by the Graduate School.

Portfolio The applicant should submit a portfolio of art work directly to the Graduate Art Adviser in the College of Fine Arts for faculty review. The portfolio should consist of 35 mm slides, for convenience in shipping, handling, and presentation. Applicants in drawing, printmaking, and photography, however, should send original prints. Cinematography applicants should send duplicate prints. The portfolio should consist of 10 to 15 separate works.

The portfolio should provide evidence of maximum strength in the area of the applicant's primary interest, although work submitted may represent more than one discipline. Return postage in stamps in the amount necessary for the return of all materials should accompany the portfolio. (Do not send cash, checks, or money orders.)

Letters of Recommendation Applicants to the Master of Fine Arts degree program also are required to submit (in addition to the portfolio) 3 letters of recommendation and a statement of intent indicating your aims and goals as a student in our graduate program.

It is the applicant's responsibility to see that all required materials, such as transcripts, GRE scores, portfolio, and letters of recommendation, are received by Art Department deadlines. For information concerning University graduate studies, admissions and graduation policies, see the appropriate section of this catalog.

Acceptance Program A student may be accepted into the M.F.A. program either provisionally or fully. Provisional enrollment is normally provided for one or two consecutive terms. When accepted fully as degree-seeking, the student will have two opportunities to be advanced to candidacy. This will come at the end of either the second or third semester of the student's enrollment in the M.F.A. program, excluding summers. The student's decision to apply for candidacy can be made in consultation with the graduate critique committee. An applicant for candidacy will have all work reviewed by the faculty during the normal end of the semester review. A student not advanced to candidacy after a second attempt will be terminated from the program.

Upon acceptance to candidacy, the student will select a committee of three faculty members, two of whom must be studio faculty in the student's primary discipline.

Program Requirements The M.F.A. degree requires a minimum of 60 hours. The bulk of a student's program is discretionary and initially is planned with the advice of the Graduate Art Adviser, and finally with the advice of the student's graduate committee.

Specific program requirements include work in theory (ART 6936 Graduate Seminar: 2 hours credit; Graduate Thesis Documentation: 2 hours credit, Graduate Forum: 4 hours credit); participation in instruction (ART 6937 graduate instruction methods; variable credit to 4 hours); presentation of work (thesis exhibition, for which credit normally is given); and thesis documentation earned under ART 6971, Master Thesis, (credit for documentation is variable); and 12 hours in art history.

S-U Grades A student cannot take any course work for a grade of "S-U" until achieving candidacy. All course work taken before candidacy must be taken in course work assigning letter grades that designate quality points.

Transfer Credit or Credit Under Special Student Status Requests for use of transfer credits or credits earned under "special" student status should be made when the student applies to the graduate program. The faculty will decide at the time of admission whether or not transfer credits and credits earned as a special student will be used toward the requirements for the M.F.A. degree. Transfer credit and credit earned as a special student to be used toward the student's M.F.A. degree is limited to 8 semester hours.

Thesis A student also is required to participate in a thesis orals session in conjunction with the thesis exhibition. This is a forum for questions from faculty representatives and is open to graduate students.

Studio Space A graduate student normally is assigned studio space, when available, in the department and is expected to remain in residence during enrollment. Exceptions must have the approval of the student's graduate committee and the Graduate Art Adviser.

Master of Arts (M.A.) – Art History The program emphasizes the history of art from the Renaissance to the present. The focus of the program is on intellectual history and art historiography, supplemented by practical internships in area galleries and museums. A knowledge of French or German is required.

Admission Requirements Students for the M.A. Program are admitted Fall Semester only. The application for admission to graduate study should be sent to the Graduate Admissions Office prior to deadline published in the Academic Calendar. However, the application and all support materials should be submitted early enough to reach the Art Department by February 15 for Semester I admission. **Incomplete applications will not be reviewed.**

At least one week should be allowed for internal processing of the application. All transcripts should have been received and the applicant's GPA for the final 2 years of undergraduate work should be 3.0 or above. The GRE score must be available for review by the department and the Graduate School.

A research paper dealing directly with Art History or a related discipline (literature, political history, psychology, philosophy or classical studies), three letters of recommendation from people who can professionally assess the applicant's ability to do scholarly academic work and a statement of intent indicating the applicant's goals as a student in the M.A. program should be sent directly to the Graduate Art Adviser in the College of Fine Arts for faculty review. A personal interview by the art history faculty also may be requested.

Applicants who do not have an undergraduate degree in Art History will be expected to complete 4 undergraduate Art History survey courses plus two critical studies courses. Any exceptions can be granted only by the art history faculty.

Program Requirements Course work consists of 16 hours of specially designated courses, 20 hours of electives, and 2 hours of thesis for a total of 38 hours.

1. Students must take the following courses
 - a) methods of Art History
 - b) one historiography course
 - c) one cultural intellectual history course
 - d) one seminar
2. The Methods course must be taken during the first two semesters in the program.
3. Museum internship is optional and can be taken any term after the first semester.

4. A museum internship must be arranged through the Art History faculty.

The formation of the thesis committee should occur after the completion of 18 hours and 2 semesters of residency. The formation of a thesis committee shall be completed by the end of the student's second semester. The student will select, in consultation with the art history faculty, a Faculty Graduate Thesis Committee. The thesis defines the area of the student's specialization.

The graduate committee must approve the written thesis and the conduct of the oral defense of the thesis in satisfaction of degree requirements.

Any transfer of credit or special student hours to be used toward M.A. degree requirements is granted only after a faculty review and after the student has been accepted into the program. The Art Department has designated a 6 hour limit on all credit transferred from other institutions or colleges and an 8 hour limit on all credit taken under special student status.

It is the applicant's responsibility to see that all required materials, such as transcripts, GRE score, portfolio, and letters of recommendation, are received in time for art department deadlines. For information concerning University graduate studies, admissions and graduation policies, see the appropriate section of this Catalog.

Master of Arts (M.A.) – Art Education A Master of Arts in Art Education is available through the College of Education. Please refer to College of Education, Department of Curriculum and Instruction for program details.

Visiting Artists and Artist-in-Residence The Art Department is widely known for the consistent level of excellence of its programs. To complement the contributions of its permanent staff and to insure the continuing expansion of learning opportunities available to students, the Art Department has brought to the campus internationally known artists and lecturers, such as Vito Acconci, Alice Aycock, Barbara Kruger, Lucy Lippard, Robert Mapplethorpe, and Robert Morris.

Art Museum The Art Museum presents a schedule of changing contemporary exhibitions in the Art Museum facility (FAM), in the Teaching Gallery in the Fine Arts building (FAH), and in the lobbies of Theatres I and II. The exhibition program focuses on contemporary American and European art and also showcases the work of faculty, students and alumni. The exhibitions and art collection serve as an integral part of the studio and art history curriculum of the Art Department and offer an opportunity to other liberal arts students to test and broaden their perceptual and analytical abilities. Brochures and catalogs of major exhibitions are published by the Art Museum to enhance and contextualize the installations. Educational programs are offered to the University and Tampa Bay community.

In addition, the Art Museum houses the USF art collection which is composed of original graphics, drawings, photographs, and African and Pre-Columbian artifacts. Selections from this collection are loaned through the Art Bank program to museums and institutions throughout the United States.

Music

Master of Music Degree (M.M.) Six major concentrations are available to graduate (M.M.) music students:

Performance	Theory	Composition
Choral Conducting	Piano Pedagogy	Band/Wind Ensemble Conducting

Admission Requirements SEE PAGES 13-16. Concurrently, the applicant must arrange to fulfill the specific acceptance requirements in the School of Music in the College of Fine Arts. Full acceptance cannot be given until the applicant satisfies audition requirements. Dates and times for auditions and diagnostic examinations may be obtained by calling or writing the School of Music. Contact the Director of Graduate Music Studies, School of Music.

Program Requirements In addition to general University and college requirements, the applicant for the Master of Music degree must satisfy the following requirements: (1) a performance audition, (2) a placement examination in music theory, and (3) successful completion of the general examination at the end of the program of study.

Date and time for the theory examinations may be obtained by calling or writing the School of Music. All candidates for the degree must take the following course work:

- Techniques of Research in Music* (3 hours)
- Critical Analysis of Music Repertory (2 hours)
- 20th Century Music Literature (3 hours)

* Recommended for the first semester of enrollment.

Degree requirements vary according to the program chosen and the student's needs and interests. Recommended programs may be obtained from the department chairperson. Each program must be approved by the Director of Graduate Studies to conform with the guidelines established by the graduate music committee. A minimum of 30 credit hours is required. The responsibility for seeing that all graduation requirements are met rests with the student.

No secondary applied music course may be used to satisfy the requirements for applied music requirements. A student must enroll for the major applied offering (4 hours).

Master of Arts (M.A.) – Music Education

Admission Requirements SEE PAGES 13-16. Concurrently, the applicant must fulfill the specific acceptance requirements to the Music Education Division. Full acceptance cannot be given until the applicant passes an interview with the Director of Music Education. Program requirements include successful completion of the music theory placement test requirement. Date and time for the theory examinations may be obtained by calling or writing the School of Music.

Program Requirements Plans in both instrumental, vocal, and general music are offered. Three plans are available to the student: 35 hours of class work, or 32 hours plus recital, or 30 hours plus thesis. Required are: 4 credits in education to include EDF 6215; 9 credits in music education including MUE 6080 and MUE 6145, 6 credits in music theory/history/literature; 2 credits in applied music, MUS 6793, and successful completion of the general examination at the end of the program.

Doctor of Philosophy (Ph.D.) in Curriculum and Instruction – Major in Music Education The degree Doctor of Philosophy is a research degree. It is granted on the basis of evidence of proficiency and distinctive achievement in music and demonstration of the ability to do original, independent investigation.

Admissions SEE PAGES 13-16.

Special requirements

1. Undergraduate grade point average of 3.0 minimum during the last 2 years of the baccalaureate degree or a grade point average of 3.5 at the master's level; and a minimum score of 1000 on the GRE
2. Three letters of recommendation
3. Favorable recommendations from program faculty
4. A Master's degree in music education or music from an accredited institution of higher education
5. At least 2 years of full-time public or private school music teaching experience.

After consulting the Music Education Coordinator, the applicant should contact the College Coordinator of Graduate Advising (EDU 312), College of Education, in order to file the College Data Form and the University application.

Program Structure

Specialization (21)	Cognate area (12)	Dissertation (see pg. 101 for credit hour requirement)
Foundations (8)	Statistics/measurement/research design	(12)
Total	(83 Hours)	

Other specific requirements can be obtained by contacting the Coordinator of Music Education.

USF Music Faculty USF's superior music faculty has been carefully chosen for its training, performing ability, and ability to teach. This achievement has been

demonstrated by such fine musical ensembles as the Faculty String Quartet, the Arts Nova (faculty) Wind Quintet, the Metropolitan Arts Trio, and the Faculty Jazz Quartet. USF music graduates are found teaching successfully in public schools and universities around the country and performing in a variety of concert settings.

Unique Learning Opportunities The School of Music at USF offers the student the opportunity to study with a distinguished faculty, work with the newest in creative equipment, and be in the company of other superior music students for an exciting and exacting period of study.

Cultural Events The College of Fine Arts arranges a full schedule of concerts, plays, lectures, films, and workshops featuring students, faculty, and visiting artists.

Events are open to the general public and are presented both during the day and in the evening. Special ticket privileges are available to USF students. For more information, contact the Fine Arts Events Office.

Visiting Artists and Artists-in-Residence The School of Music utilizes guest composers, conductors, and performing musicians to enhance its offerings in terms of teaching faculty, forum appearances, and in the conducting of musical programs, symposia, and clinics.

Student Organizations Sigma Alpha Iota, a national professional music fraternity for women, and Phi Mu Alpha Sinfonia, a professional music fraternity for men, are dedicated to serve the cause of music in America. College Music Educators National Conference is an affiliate of the Music Educators National Conference and is open to all interested students. An International Association of Jazz Educators chapter is open to anyone with interests in the jazz specializations. Pi Kappa Lambda, an academic honorary society for musicians, maintains a chapter in the School of Music.

COLLEGE OF MEDICINE

The Graduate Faculty of the College of Medicine consists of scientists who conduct research in many fields of science basic to understanding disease processes and to the development of improved methods of diagnosis, treatment and prevention of disease. Students receive their research training in up-to-date methods of scientific investigation and gain experience in modern well-equipped laboratories. The faculty is dedicated to providing high quality education in an environment conducive to scholarly activity and scientific achievement.

Graduate Degree Programs

Doctor of Philosophy (Ph.D.) Medical Sciences

The USF College of Medicine offers a graduate program leading to the degree of Doctor of Philosophy in Medical Sciences, with a specialty in Anatomy, Biochemistry and Molecular Biology, Medical Microbiology and Immunology, Pathology and Laboratory Medicine, Pharmacology and Therapeutics, or Physiology and Biophysics.

The program is designed to provide students with a broad knowledge in the basic medical sciences, while preparing them for careers as effective and knowledgeable teachers, as well as productive and versatile researchers. To meet these objectives, students take courses in the medical sciences and related areas, participate in seminars, and receive individual research training. Departmental advisory committees counsel the entering students in planning their first year curriculum. In addition to course work and participation in seminars, first year students are expected to become familiar with ongoing research in their chosen department; when possible, they are encouraged to work on a part-time basis as research assistants in their department. Once the student selects a major professor, a formal dissertation committee is appointed. The dissertation committee assists the student in planning the research and course of study, evaluates the student's progress, supervises the comprehensive examination, and conducts the final dissertation defense.

By the end of the second year, a student has usually completed sufficient course work and met the other research requirements to take the comprehensive qualifying examination. Successful completion of this examination leads to formal admission to candidacy for the Ph.D. degree. The final phase of the program emphasizes research and independent study and leads to a written dissertation. The Ph.D. degree is awarded upon successful completion and oral defense of the dissertation.

Information concerning this program may be obtained by contacting the Associate Dean for Research and Graduate Affairs, College of Medicine, MDC Box 40, 12901 Bruce B. Downs Boulevard, University of South Florida, Tampa, Florida 33612-4799.

Departments within the College of Medicine may have additional requirements that pertain to their respective training program. These can be found in the guidelines prepared by the individual Departments which should be consulted for further information.

Requirements for Admission SEE PAGES 13-16.

Special requirements:

1. An overall GPA of 3.0 on a 4.0 scale with a minimum GPA of 3.0 in undergraduate science courses.
2. A GRE score of 1100 (total verbal and quantitative) or higher. However, if the applicant scores 600 or higher on the advanced GRE test in the major field and has a score of 1000 or higher on the General test, the minimum score of 1100 may be waived.

3. The applicant must have a background in the sciences, including biology, chemistry, physics, and mathematics. Particular admission criteria are available from the individual departments.
4. In addition to course requirements summarized above, the department may require additional course work before admission into the program. Specific deficiencies may be corrected through courses taken within a specified period of time at the discretion of the department. Each course to be taken, as well as the acceptable grade, is agreed upon by the student and the department at the time the student is accepted into the Graduate Program. This information will be communicated to the student and to the Associate Dean for Research and Graduate Affairs (College of Medicine) prior to registration for the term.
5. Except for the State or University minimum admission criteria, all other requirements herein summarized, may under exceptional circumstances, be waived in consideration of the applicant's expected success in the program, with the recommendation of the faculty of the major department, and with the approval of the Associate Dean for Research and Graduate Affairs.

Application Completed application forms, GRE scores, and two official transcripts of undergraduate and any previous graduate work should be sent to the University of South Florida Admissions Office, Tampa, FL 33620.

Three letters of recommendation should be sent to the Associate Dean for Research and Graduate Affairs, University of South Florida College of Medicine, MDC Box 40, 12901 Bruce B. Downs Blvd., Tampa, FL 33612.

Financial Aid A limited number of assistantships, fellowships, and tuition waivers are available for graduate students. Applicants seeking support should contact the chairperson of the department to which they are applying.

Major Research Areas

Anatomy Research areas: Neuroendocrinology research, exploration of testicular function and dysfunction, embryo development, computer-aided anatomical reconstruction and diagnosis, pain mechanisms and stimulation-produced analgesia, cardiac morphometry, angiogenesis.

Biochemistry and Molecular Biology Research areas: Molecular aspects of diabetes atherosclerosis and porphyrias, hormonal regulation of cholesterol biosynthesis, chemical carcinogenesis, growth factors, control of gene expression, HLA gene structure, protein chemistry and structure, bioenergetics, metalloenzymes, connective tissue biochemistry, immunochemistry, biochemistry of thyroid, steroid and peptide hormones and biosynthesis biochemistry.

Medical Microbiology and Immunology Research areas: Aging, bone marrow transplantation, cell signalling, host defense mechanisms against *Candida*, *Legionella*, *Mycobacterium* and *Treponema*, molecular and cell biology of lymphokines and their receptors, molecular biology of tumor viruses, modulation of the immune system by drugs of abuse, natural killer cells, novel antiviral drugs, tumor infiltrating lymphocytes.

Pathology and Laboratory Medicine Research areas: Hormonal regulation of ovarian surface epithelial cells and identification of their specific growth factors; pathobiology and biochemistry of the lung surfactant system, especially acute injury and repair of alveolar epithelium in aged animals and in animals exposed to ozone; interaction of pathogenic bacteria and vascular endothelium; and regulation of thymosin β -4 in murine bone marrow.

Pharmacology and Therapeutics Research areas: Pharmacological mechanisms and therapeutic implications in the aged animal; neuropharmacology with an emphasis on cholinergic and dopaminergic mechanisms in the brain; neurochemical effects of nicotine and cytokines; mechanisms and molecular regulation of drug biotransformation reactions in liver and brain; regulation and function of second messenger systems, with an emphasis on the role of cyclic nucleotide metabolism in bronchial and vascular smooth muscle and in the immune system; cellular mechanisms mediating the development of hypertension.

Physiology and Biophysics *Research areas:* Neural and humoral control mechanisms of pressure and flow relationships through series- and parallel- coupled blood vessels at both the macroscopic and microscopic levels, vascular smooth muscle reactivity in normotensive and hypertensive states; calcium fluxes during excitation-contraction coupling; renal function control of renin release; hypertension, atrial natriuretic factor; interactions among brainstem cardio-respiratory neurons; neural network analysis and simulation; endocrine and neuroendocrine control of reproductive processes; hemodynamics in endotoxic shock; reflex regulation of respiratory activity; hypothalamic control of temperature and cardio-respiratory function; cell physiology-control of ion channels in membranes.

COLLEGE OF NURSING

The College of Nursing is committed to the improvement of nursing and health care services through its educational programs, community service, and related research activities.

The College of Nursing limits enrollment on the basis of availability of sufficient qualified faculty, laboratory and classroom facilities, and clinical resources for nursing practice experience for students. Florida residents are given priority. Applications from all qualified applicants are accepted without regard to age, sex, cultural, racial, religious, or ethnic background.

Philosophy of Nursing

Nursing is a profession and a discipline sanctioned by society. Its essential goal is health which is expressed within the context of personal, interpersonal, and social systems. The focus for professional nursing is human beings interacting in a variety of environments for the purpose of pursuing health or a dignified death. Nursing is a transactional process which establishes mutually set goals with individuals, groups, families, and care of the sick, injured, and dying. The complex intellectual processes used by nursing are perceiving, thinking, relating, judging, acting, and interacting. These processes require a scientific body of knowledge to assess, plan, implement, and evaluate nursing care. Concepts which are the central focus for the practice of professional nursing are human beings, society, environment, and health.

Human beings are unique and holistic and are characterized as open systems in transaction with their environment. They are perceptual, purposeful, action, time and goal oriented. Human beings communicate through their use of language and other symbols that reflect individual, group and societal differences. Society encompasses individual, group, family and community values, norms and expectations. The United States is a pluralistic, democratic, dynamic society in continuous change as exemplified by increased technological advances. However, the freedom of individuals and groups is protected by the laws and the behavioral norms in this social system. Environment is comprised of ecosystems which support the interactive process of the personal, interpersonal and social systems. Nursing systems strive to promote, provide and support healthy environments as an integral aspect of professional nursing practice.

Health is viewed within the context of dynamic life experiences of individuals, groups, families and communities. Health implies continuous adjustment to stressors and challenges in the internal and external environment through use of resources in order to achieve maximum potential for optimum functioning. Health is influenced by cultural, social, economic, genetic and political factors as well as value systems and religious beliefs. Human beings have the right to quality health care, the obligation to engage in health practices, and the freedom to make informed decisions about their health, health practices and health care.

Nursing care is an integral component of health care delivery. Professional nurses assume various roles which involve independent, collaborative, interdependent, and dependent functions. Professional nurses provide health services in a variety of complex systems and are accountable for these professional services based on: (1) a body of knowledge which is continuously being refined and expanded through nursing research, (2) a Code of Ethics, (3) standards of practice as determined by the profession, and (4) the Nurse Practice Act. Professional nurses provide leadership through participation in professional and community organizations. As responsible citizens, nurses contribute to the promotion of quality health care by participation as knowledgeable members of society in activities that influence the health of individuals, families, groups and communities.

The discipline of nursing is an integral part of the system of higher education and is responsible for the development and dissemination of knowledge. The discipline is also responsible for promoting and preserving the historical and philosophical foundation of the profession. Knowledge is developed through identification of models for

systematic thought, constructing and testing theories for nursing, and conducting research. The discipline disseminates knowledge for nursing through scholarly publications and presentations and through curriculums that prepare students for entry into professional practice and for entry into areas of specialized practice and research. In these curriculums, the teaching/learning process is a cooperative enterprise in which learners have the freedom to learn and teachers have the freedom to teach. Learning is viewed as a lifelong process of social, psychological and intellectual growth essential for performing the functions of professional nursing.

Graduate Degree Programs

The College of Nursing offers one graduate program leading to the Master of Science degree. This program is accredited by the National League for Nursing. A major goal of the program is to prepare nurses for advanced practice in specialized roles. Specifically, the program aims to prepare expert nurse clinicians who can function as clinical nurse specialists or nurse practitioners, depending upon the specialty concentration. The program also prepares students to participate in nursing research and to contribute to the advancement of the nursing profession.

Master of Science Program with Major in Nursing

Admission Process Students must fulfill the University Graduate School admission requirements and College of Nursing admission requirements for acceptance into the graduate program at the Master's level. Admission to the program is competitive and is based on the satisfactory review of all required submitted materials and on the availability of adequate classroom, clinical facilities and faculty. In addition to general University admission requirements and regulations governing graduate study, the College of Nursing has its own requirements for admission. It is important that the applicant simultaneously seeks to satisfy these requirements along with those of the Graduate Admissions Office in order to meet all deadlines. Application for admission is made through the Graduate Admissions Office. When all required information is received by them, it is forwarded to the College of Nursing for final processing.

Prospective students must submit evidence of the following for review as part of the application process:

1. A baccalaureate degree in nursing from an NLN accredited program. NOTE: Nurses with baccalaureate or graduate degrees in another discipline may be accepted on the basis of individual evaluation of previous educational preparation and completion of prescribed requirements. Transcripts of all previous college work should be submitted.
2. Current licensure as a registered nurse in the State of Florida.
3. Three letters of reference, indicating potential for graduate study, from persons who can attest to the applicant's academic ability and clinical competence.
4. A course in statistics, including introduction to probability and testing hypotheses.
5. Ability to demonstrate competencies in client assessment skills comparable to those required in NUR 3065C (a challenge exam is available).
6. Record of physical examination and Hepatitis B immunization validation or declination required prior to enrollment.
7. Personal interview with designated College of Nursing faculty. (Phone interviews are acceptable for out of state students.)

Requirements for M.S. Degree The College of Nursing master's program requires a minimum of 36 credit hours. The program was designed to include the following curriculum components: nursing core, specialty concentration, cognate/support, and elective courses.

The master's degree program offers six areas of specialty concentration: Adult Health Nursing, Community Health Nursing, Family Health Nursing, (Subspecialties in Child Health or Family Health), Gerontology Nursing, Oncology Nursing, and Psychiatric-

Mental Health Nursing. The curriculum is designed to meet the needs of full-time and part-time students.

1. **Nursing Core (required of all students) (9 hours)**
Three courses that focus on Nursing theories, the conceptual basis of Specialty Nursing practice and Nursing research: NGR 6121 (3), NGR 6131 (3), NGR 6800 (3).
 2. **Specialty concentration component (15-16 hours)** Each student meets the requirements in one concentration. Each concentration provides theory and practice in a specialty area, including a minimum of 6 credit hours practicum experience.
 - Adult Health Nursing (15 hours)**
NGR 6141C (3) NGR 6210 (3) NGR 6210L (1-6)* NGR 6211 (3)
NGR 6211L (1-6)*
 - * Students must enroll in at least 2 credits for each practicum with a maximum total of 6 credits. Each practicum may be repeated for a maximum of 4 credits.
 - Community Health Nursing (15 hours)**
NGR 6738 (2) NGR 6602C (4) NGR 6603L (6) NGR 6610C (3)*
 - * Students may select this or another appropriate community related nursing course.
 - Family Health Nursing (15 hours)**
NGR 6610C (3) NGR 6609C (2) NGR 6617L (6) NGR 6630 (4) or
NGR 6631 (4)
 - Gerontology Nursing (15 hours)**
NGR 6250 (3) NGR 6251 (3) NGR 6260 (3) NGR 6253 (3-4)
NGR 6254 (3-4)
 - Oncology Nursing (14-15 hours)**
NGR 6142 (3) or NGR 6097 (2) NGR 6096 (3) NGR 6539 (3)
NGR 6948 (3) NGR 6949 (3)
 - Psychiatric-Mental Health Nursing (16 hours)**
NGR 6505 (3) NGR 6506 (3) NGR 6507 (2) NGR 6566L (2)
NGR 6508 (2) and NGR 6567L (2)* OR,
NGR 6509 (2) and NGR 6568L (2)*
Elective Practicum (NGR 6566L, NGR 6567L, or NGR 6568L)
 - * May be repeated for up to 4 credits.
 3. **Cognate Support Components (6-9 hours)**
Courses that support the concentration area and may or may not be taught within the College of Nursing. Certain concentration areas require specific cognate/support courses. Students should consult with faculty advisers for appropriate courses.
 4. **Elective Component (3-6 hours)**
Optional course(s), selected by the student with guidance and approval from adviser, that will enhance the student's program and career goals. Students may participate in a research learning experience directed by Nursing faculty. Options include: Thesis, NGR 6791 (6 credits) or Directed Research, NGR 6915 (3 credits). Elective courses also may be selected from other disciplines and/or courses within the College of Nursing such as those listed below:

NGR 5935 (3)	NGR 6030C (3)	NGR 6120 (2)	NGR 6124 (3)
NGR 6140 (4)	NGR 6195 (3)	NGR 6199 (3)	NGR 6252 (2)
NGR 6280 (3)	NGR 6482 (3)	NGR 6505 (3)	NGR 6506 (3)
NGR 6511 (3)	NGR 6703 (3)	NGR 6710 (3)	NGR 6712 (2)
NGR 6790 (3)	NGR 6905 (1-6)	NGR 6931 (1-4)	NGR 6947 (2-4)
- Elective Education Sequence.** Students who wish to complete an elective sequence in Nursing Education are required to take the courses listed below:
NGR 6822 (3) NGR 6710 (2) NGR 6712 (2) NGR 6947 (2-4)
- Special Requirements** Tuition and fees for students enrolled in nursing are the same as for other students at the University of South Florida. However, there are expenses not covered by the basic tuition and fees. Costs for textbooks are estimated to range from \$150-200 per semester. Graduate students must provide or have access to client

assessment equipment (e.g., ophthalmoscope, stethoscope) if required by the program of study.

Medical care and hospitalization insurance is required. An annual physical examination and Hepatitis B immunization validation or declination are required.

Transportation to and from health care agencies and settings for clinical nursing experiences is the responsibility of the student.

Other Academic Requirements Students are required to maintain a GPA of 3.0 throughout the program. Students must achieve a grade of "C" or better in each course accepted toward the graduate degree; students must achieve a "B" or better in all undergraduate courses taken after matriculation as electives or to make up deficits. Grades for these courses are not computed in the overall academic average.

Graduate students must maintain an overall average of 3.0 (B) in all courses. No grade below "C" will be accepted toward a graduate degree, but all grades will be counted in computing the overall average. (See Page 24). In addition to maintaining an overall grade point average of 3.0 (B) in all courses, graduate students must receive a grade of "S" in all S/U courses required in the student's program plan.

A student may repeat a course in which a grade less than "C" or "U" has been received, one time, upon recommendation of the student's academic advisor and permission of the Student Affairs Committee.

Application for the degree must be filed with the University Registrar on the appropriate form signed by appropriate College of Nursing personnel. The degree candidate is responsible for obtaining and submitting the degree application form by the date specified by the University. All "I" grades must be removed from the student's record before graduation.

Additional academic requirements for progression and graduation are presented elsewhere in the catalog under university policies and procedures for the Graduate School.

Financial Aid Policies and procedures pertaining to financial aid are the same as for other graduate students. For general information, write to the Office of Financial Aid, Student Affairs, University of South Florida, Tampa, Florida 33620.

Tuition waiver scholarships for up to 9 hours of coursework may be given to graduate students who hold at least a 50% appointment as Graduate Research Assistants or as Graduate Teaching Assistants. Such waivers are awarded for a given academic term and may be repeated. Other loans, scholarships, and grants are usually available. Information specific to funds available through the College of Nursing may be obtained through the Office of Student Affairs, (813) 974-2191.

COLLEGE OF PUBLIC HEALTH

The College of Public Health provides coursework, research methods, and field experiences to prepare students in the public health professions for the challenging health problems facing the State, nation, and other countries. The field of public health is broad and is open to students from diverse academic disciplines including Education, Business, Social and Natural Sciences, Mathematics, and Engineering. Graduates are prepared for careers as administrators, managers, educators, researchers, and skilled health professionals.

Course content is directly related to addressing and meeting public health issues and off-campus cluster programs may reflect additional offerings to meet specific needs.

Within the College of Public Health, the Florida Legislature has established the Florida Public Health Information Center (FPHIC) which was created to serve as a statewide center for policy oriented health services research, and to collect and disseminate health care information to public and private health care organizations in the state.

Graduate Degree Programs

Master of Public Health (MPH) Master of Science in Public Health (MSPH) Master of Health Administration (MHA)

The Master of Public Health (MPH), Master of Science in Public Health (MSPH), and Doctor of Philosophy (Ph.D.) degrees are offered in the following concentration areas by the four departments in the College of Public Health.

Community and Family Health Accelerated MPH in Health Education for undergraduates; MPH/MSW in Maternal and Child Health/Social Work (dual program); Public and Community Health Education; Maternal and Child Health; Public Health Nutrition; Social and Behavioral Science/Public Health (MSPH and Ph.D. only).

Epidemiology and Biostatistics Epidemiology, Biostatistics (MSPH and Ph.D. only).

Environmental and Occupational Health Environmental Health; Industrial Hygiene and Safety Management; Toxicology; Tropical Public Health/Communicable Disease; Occupational Health for Health Professionals.

Health Policy and Management Health Care Management and Organizations; Health Policies and Programs; International Health Management. The department also offers the Master of Health Administration (MHA).

Admission Requirements

SEE PAGES 13-16 for general requirements. Applications are accepted each semester, but it is recommended that prospective students apply for Fall semester in order to best accommodate the sequence of courses in the concentration areas.

Students considering admission to the Public Health program who do not have adequate courses or training in the health and human biological sciences are urged to take HSC 4554 Survey of Human Disease or equivalent, and HSC 4203 Introduction to Public Health. Other requirements for proficiency in specific content areas may be set by the department as a condition of or prior to admission into the Master's degree programs.

Academic Application Requirements

1. An applicant should have an undergraduate grade point average of at least 3.0 in all upper division coursework.
2. In addition to the grade point average requirement, an applicant should have a total combined Quantitative/Verbal GRE score of 900 or higher for the MPH; 1000 or higher for the MSPH; 950 or higher for the MHA. A GMAT score of 500 or

higher may be substituted for the Master's degrees in the Department of Health Policy and Management.

3. Applicants for the MPH, MSPH or MHA degree who have completed an advanced professional degree including the M.D., J.D., Ph.D., may not be required to submit GRE scores. Physicians and other professional degree holders must be licensed in the United States and are required to submit a copy of their license with their application.
4. Applicants who do not meet the minimum entry criteria will be reviewed on an individual basis by the College of Public Health departmental admissions committees.

Public Health Core Courses

The following core courses are required for completion of all College of Public Health

MPH Programs:

PHC 6000 (3)	PHC 6050 (3)	PHC 6102 (3)	PHC 6357 (3)
PHC 6410 (3)			
Total	(15 hours)		

Core requirements for the MSPH and Ph.D. include:

PHC 6000 (3)	PHC 6050 (3)	Elective Core (3)
Total	(9)	

Doctor of Philosophy (Ph.D.)

Application Requirements Applicants to the Ph.D. in Public Health must submit a completed graduate application to the Graduate Admissions Office. Applicants to the doctoral program must meet the following minimum criteria in order to be considered for admission. The meeting of these criteria shall not be the sole basis for admission, however.

Minimum criteria are:

1. A combined Quantitative and Verbal score of 1100 or higher on the GRE; a GMAT score of 600+ will be considered in lieu of GRE by the Department of Health Policy and Management only.
2. Grade point average of 3.0 or higher. A Master's degree in an appropriate field is required, although exceptional students with a baccalaureate degree may be considered.
3. Applicants must be prepared to register as full-time students, for at least one academic year (Fall, Spring).
4. Applicants must submit evidence of written/analytical skills to the College of Public Health. This shall take 2 forms:
 - a) Graduate level term paper, thesis, or research paper of which the student was sole author, or a publication of which the student was first author; and
 - b) Detailed personal statement which describes why the applicant wishes to obtain a Ph.D. degree in Public Health. This statement must be less than five pages in length.
5. Applicants seeking consideration must possess the MPH, MSPH or equivalent. Applicants who hold other graduate degrees may be considered for admission to the doctoral program, but they must complete core course requirements which include Epidemiology, Biostatistics and one additional core course approved by their advisor (total 9 hours).
6. Applicants must submit at least 3 letters of recommendation, one of which must be from a departmental faculty member after review and found admissible.

Ph.D. Program Requirements

An entering student lacking a Master's degree in Public Health must take the 9 hours of core courses and 4 departmental concentration area courses required for all MPH students. A student who has a Master's degree will be required to take those public health courses which have not been included in previous Master's study. Doctoral students will be required to take a more advanced biostatistics course than PHC 6050. An additional 13 hours of doctoral level courses in the student's area of interest are required. The remaining 47 hours will consist of additional course work, research, and

dissertation which will be determined by the student's committee. Courses offered by other colleges may be used when appropriate.

Credit Hours:

- Public Health core courses (3 courses or equivalent) (9)
- Advanced biostatistics course (3)
- Required courses for concentration area or equivalent (12)
- Required doctoral level courses (minimum) (13)
- Elective courses, directed research, dissertation credits
- Evidence of teaching proficiency
- Total (90)**

The University requirements for the Ph.D. can be found in the general section of this catalog: Credit Hours, Tools of Research, Grade Levels, Qualifying Examination, Dissertation, and Student Committees.

Financial Aid

In addition to the programs listed below, loans, work-study and other forms of financial assistance may be pursued through the Office of Financial Aid, SVC 1102, 974-4700, SEE PAGES 17-18.

Graduate Assistantships Graduate Assistantships are available through the departments and are funded through grant monies. All applicants are processed through the Scholarship and Awards Committee and eligible students are forwarded to the departments. Application deadline dates are: Fall - April 1, Spring - November 1, Summer - February 1. Applications are available in the College of Public Health Office of Academics, 974-3623.

U.S. Public Health Traineeships The College of Public Health cooperates with the U.S. Public Health Service in offering traineeships to our students. A traineeship is an award based on need which will help to defray part of a student's educational expenses. The recipient of a traineeship is encouraged to participate in departmental activities and research. The traineeship award includes a tuition waiver for nine semester hours as well as a stipend. To be eligible for an award, a student must be matriculated full-time in any degree program offered in the College of Public Health except Public Health Education or Industrial Hygiene. The availability of traineeships is entirely dependent on federal funds, and they are therefore awarded solely on a semester basis. Students will be notified when funds are available. Awards are made by the Awards and Scholarship Committee upon recommendation of the department. Applicants must be U.S. citizens or permanent residents. The deadline for application is April 1, with awards announced by early July. Applications are available in the College of Public Health Office of Academics, 974-3623.

NIOSH Traineeships The National Institute of Occupational Safety and Health offers traineeships to accepted students in Industrial Hygiene/Safety Management Program. The traineeship award includes a tuition waiver for 9 hours, as well as a stipend. Applicants must be U.S. citizens or permanent residents. Applications are available from the College of Public Health Office of Academics upon acceptance into the program, 974-3623.

Maternal-Child Health (MCH) Traineeships Federally funded MCH traineeships are available to Florida resident and nonresident students admitted to the MPH or MSPH degree program in Maternal and Child Health within the Department of Community and Family Health. Traineeships provide student stipends and/or financial assistance toward tuition costs. The availability of MCH Traineeships is dependent on annual funding. Competitive awards are made on the basis of the following criteria: 1) students should hold a degree recognized by their own profession as conferring professional status in an MCH relevant field, 2) at least two years of professional experience related to MCH, and 3) career goals consonant with a commitment to MCH. Application forms are available through the College of Public Health Office of Academics, 974-3623.

The Carl A. Gelin Endowed Fellowship provides financial support to students in the Department of Health Policy and Management. The award is made by the department to an eligible student(s).

FPHA Scholarships Florida Public Health Association accepts application/nominations for FPHA Scholarships -- \$500 for MPH or MSPH candidates. Letters should include: present position, future goals and ambitions, and past and present academic activities. Scholarship applicants must be FPHA members. Inquiries or nominations should be directed to: College of Public Health, Florida Public Health Association, 13201 Bruce B. Downs Blvd., Tampa, FL 33612, (813) 974-3623.

Department of Community and Family Health

The Department of Community and Family Health seeks to improve the health status of the family through an interdisciplinary approach of providing preventive, curative, and rehabilitative health care services within the community. Programs offered through the Department focus on: (1) the analysis of the health status and needs of a population including social, behavioral, and demographic factors and characteristics; (2) health promotion and education; (3) client intervention strategies; (4) nutrition sciences and related program development; and (5) administration and management of maternal-child health care services.

The Department of Community and Family Health offers graduate studies leading to the Master of Public Health (MPH), Master of Science in Public Health (MSPH), Dual MPH/MSW in Maternal-Child Health and Social Work, and the Doctor of Philosophy (Ph.D.) degrees in the following concentration areas.

Maternal and Child Health

The program of study is designed for individuals representing a broad spectrum of health and human service professions: medicine, nursing, social work, nutrition, rehabilitation, early childhood education, health education, speech and hearing, social sciences and other health and human service professions.

The graduate program in maternal and child health prepares health professionals in a multidisciplinary, community-based approach to serve the public health care needs of women, children and their families. The curriculum enables students to acquire an in-depth understanding of specific content areas including organization and delivery of services; administration and management; legislative issues; policy development; financing mechanisms; community and organizational change; principles of social and behavioral sciences; family dynamics; maternal, child and adolescent morbidity and mortality; ethics; reproductive health and population dynamics; and problems and issues related to special populations. Students also develop analytical and methodological skills which can be applied to program development and the design and conduct of research and evaluation.

College Core Courses (15 hours)

Concentration Area Courses (12 hours)

PHC 6530 (3) PHC 6537 (3)

Support Courses (9 hours)

PHC 6707 (3) PHC 6521 (3) PHC 6531 (3) PHC 6532 (3)

PHC 6533 (3) PHC 6534 (3) PHC 6535 (3)

PHC 6977 Special Project (3 hours)

PHC 6945 Supervised Field Experience (1-12 hours)

Comprehensive Examination

Total (39-51 hours)

Public Health Education

The graduate program in public health education serves an increasing need for professionals trained in social health issues and in the personal health lifestyles of American society. It is the primary function of professional health educators to assist individuals and families in adopting self-care practices and healthy lifestyles, to encourage use of health services, and to promote participation in the design and implementation of these services which so dramatically affect the individual's health.

College Core Courses (15 hours)

Concentration Area Courses (6 hours)

PHC 6500 (3) PHC 6508 (3)

Support Courses (9 hours) PHC 6505 (3) PHC 6533 (3) PHC 6707 (3)
 PHC 6506 (3) PHC 6507 (3)

Approved Electives (6 hours)

PHC 6977 Special Project (3 hours)

PHC 6945 Supervised Field Experience (if applicable) (1-12 hours)

Comprehensive Examination

Total (39-51 hours)

Public Health Education, Accelerated Entry to the MPH

The accelerated entry program provides an opportunity for students, who meet specific eligibility requirements, to earn a Master's degree without first completing their baccalaureate studies. Individuals begin the Master's course of study after completion of 90 undergraduate hours. Full-time students are able to complete the required coursework within 2 to 2 1/2 years. Students are encouraged to explore this program option and consult with a health education program advisor during the academic term in which they expect to complete 60 hours.

Admission Requirements Applicants to the accelerated entry program in public health education must have completed 90 undergraduate hours, achieved a GPA of at least 3.0, and earned a combined verbal and quantitative score of at least 900 on the GRE. It is recommended that students complete the following undergraduate coursework in preparation for the Master's program:

Personal health/health science	Basic first aid
College mathematics (through algebra)	Speech communication
Technical or expository writing	General chemistry with laboratory
Introductory biology with laboratory	Advanced biological science
Introductory psychology	General anthropology
Medical anthropology	Introductory sociology
Educational theory and method	Education psychology

MPH Coursework Accelerated entry into the MPH requires at least 60 hours of classroom study in addition to a field experience. Minimum coursework requirements are:

Program Introductory Courses (or Equivalent) (13 hours)

HSC 4203 (3) HSC 4541 (3) HSC 4554 (3) HSC 5101 (4)

College Core Courses (15 hours)

Concentration Area Courses (12 hours)

PHC 6500 (3) PHC 6505 (3) PHC 6707 (3) PHC 6533 (3)

Content Electives (12 hours)

Process Electives (4 hours)

Select one: EME 4402 (2) EME 5403 (3)

Select one: LIS 4302 (2) LIS 6312 (3)

PHC 6977 Special Project (3 hours)

PHC 6945 Field Experience (1-12 hours)

Comprehensive Examination

Total 60-72 hours

Public Health Nutrition

Graduate studies in public health nutrition are designed to enhance the biological and physiological backgrounds of baccalaureate trained nutritionists and to provide opportunities to integrate skills in administration, planning, and social and behavioral sciences. The course of study focuses on current, cutting-edge issues in health care, nutrition, and the related effects on health throughout the life cycle. Specific areas of study include: nutritional assessments, geriatric nutrition, perinatal nutrition, childhood nutrition, nutrition education and counseling techniques, government regulations and policy development, and perspectives on international nutrition problems and programs.

Professionals representing other health-related fields, including medicine, nursing, health education, and administration will find coursework in public health nutrition essential in responding to the rapid changes affecting the health care industry.

Admission Requirements In addition to the basic admission requirements, one year of work experience in nutrition or other health-related fields is recommended. In

addition, it is recommended that applicants complete the following course work during their undergraduate studies. Academic deficiencies will be evaluated on an individual basis. Undergraduate preparation should include:

- | | |
|----------------------------------|--|
| 2 semesters of general chemistry | 2 semesters of organic chemistry with labs |
| 1 semester of biochemistry | 1 semester of physiology |
| 1 semester of social sciences | 1 semester of nutritional sciences |

College Core Courses (15 hours)

Concentration Area Courses (6 hours)

PHC 6521 (3) PHC 6527 (3)

Electives (15)

PHC 6977 Special Project (3)

PHC 6945 Supervised Field Experience (1-12)

Comprehensive Examination

Total 39-51

Dual MPH/MSW In Maternal-Child Health and Social Work

The dual master's degree program in maternal and child health (MPH) and social work (MSW) is jointly offered by the College of Public Health and the College of Arts and Sciences, University of South Florida.

The program curriculum enables students to develop skills for a comprehensive range of effective client interventions in a variety of health care settings. The fundamental methodological tools of public health include biostatistics, epidemiology, and health management and evaluation. These skills assist the social worker to target the needs of the client, both as an individual and as part of a group.

The dual MPH/MSW program is a two to three year course of full-time study. Coursework requirements for the MSW are listed under the Department of Social Work, College of Arts and Sciences.

Master of Science In Public Health (MSPH) Degree Program

In the Department of Community and Family Health, the Master of Science in Public Health (MSPH) degree prepares students for careers oriented toward research, evaluation and needs assessment in community and family health.

The degree requirements include the successful completion of three selected College of Public Health core courses, specialization area courses, research methods courses, thesis, public health seminars and a comprehensive examination. At least 12 hours of coursework exclusive of the thesis must be taken with the Department of Community and Family Health.

College of Public Health Core Courses (9)

PHC 6000 (3) PHC 6050 (3) Elective Core (3)

Specialization Area Courses (27)

(including Research Methods courses)

Public Health Seminars

Thesis

Comprehensive Examination

MINIMUM SEMESTER HOUR REQUIREMENTS (44)

Specialization Area Courses: May be selected from the following fields of study offered through the Department of Community and Family Health: maternal and child health, public health education, public health nutrition and social and behavioral sciences. Courses also may be selected from other USF college offerings.

Ph.D. Program

The Department of Community and Family Health doctoral curriculum is a cooperative, learning, research, and problem-solving venture in which students and faculty contribute interdependently to pursuits essential to the health of human society.

A graduate of the doctoral program will be able to contribute to the improvement of the health and well-being of individuals, families, and communities through intradisciplinary and interdisciplinary effort. The graduate will be qualified to implement changes within the community of public health and conduct fundamental and applied research in identification, prevention, and evaluation of public health problems. The

graduate will be expected to assume leadership positions at the local, state, and national levels.

Guidelines for Acceptance Students seeking entrance into the program should have sufficient work and educational experience to permit them to focus their research efforts in the area of public health. This background may include:

- 1. Education:** a) A prior doctorate or master's degree in a health-related discipline, such as the health sciences, social sciences, administration, nutrition, or health education, or b) A Master's degree in Public Health, or c) A Bachelor's degree plus specialty training, i.e., nurse practitioner training, nurse midwifery, etc.
- 2. Experience:** a) Experience as a clinical practitioner in a discipline setting appropriate to a community and family health interest, or b) Experience in a research setting such as health statistics, legislative research, program evaluation units, private agencies as a research associate in an academic setting, or c) Administrative or managerial experience in the organization and delivery of public health services, or d) Experience in the teaching of a public health discipline in an academic setting.

While no one set of criteria is an absolute prerequisite, the student must be prepared with a background of sufficient depth to function as a mature and self-directed professional in the area of public health.

Department of Epidemiology and Biostatistics

Epidemiology

Epidemiology is the study of diseases as they affect populations; it involves the factors affecting disease rates and the distribution of disease in populations. As a fundamental science of preventive medicine and public health, epidemiologic research has traditionally focused on questions of disease causation through population-based studies for both infectious and chronic diseases. More recent topics now addressed by epidemiologic studies also include behavioral risk factors for disease, clinical trials and assessing the quality of health care. The content, methods, and scientific inference in the major epidemiologic issues of today are examined in this program.

Biostatistics

Biostatistics involves the application of statistical techniques to scientific research in health related fields, including medicine, biology and public health. Biostatisticians play essential roles in designing studies and analyzing data from research problems as diverse as the study of new drugs to combat AIDS, evaluation of interventions aimed at reducing infant mortality, determination of major risk factors for heart disease, development of psychiatric symptoms and drug and alcohol use in teenagers, and the reduction in mortality in child trauma centers.

Master's Degree Programs

The Department offers degrees leading to the Master of Public Health (MPH), Master of Science in Public Health (MSPH), and the Doctor of Philosophy (Ph.D.).

The MPH Program in epidemiology is designed for health professionals who wish to acquire a broad understanding of public health with an emphasis upon epidemiologic methods. Students in the MPH program must fulfill the following minimum requirements:

College of Public Health Core Courses (15 hours)

Concentration Area (12 hours)

PHC 6006 (3) PHC 6051 (3) PHC 6700 (3)

Approved Electives (10 hours)

Six of the 10 hours of approved electives must be epidemiology or biostatistics courses offered in the Department.

Special Project (3 hours)

Field Experience (if applicable) (1-12 hours)

Comprehensive Examination

The MSPH program in Epidemiology is designed for students who are primarily interested in developing research careers in epidemiology or biostatistics. Application

epidemiology/biostatistics and one additional required core course outside the Department in addition to doctoral coursework:

Doctoral Coursework (30-45 hours, depending on background)

Dissertation (18 hours)

Evidence of Teaching Proficiency

Oral and Written Qualifying Examinations

Final Defense

The 18 hours for the dissertation reflects university minimum requirements; most students are expected to take 1-3 years to complete their dissertation after completion of their coursework. All doctoral students in the department are required to be full-time students during the four semesters required for doctoral coursework. Deadline for application into the Epidemiology doctoral program for the 1993 Fall semester is March 1, 1993. Selection of students is on a competitive basis and correspondence with faculty research interest.

NOTE: Knowledge of college level algebra is required for elementary biostatistics courses; advanced biostatistics courses require knowledge of calculus and linear algebra.

Department of Environmental and Occupational Health

The Department offers degrees leading to the Master of Public Health (MPH), Master of Science in Public Health (MSPH), and Doctor of Philosophy, to successfully develop, administer, and evaluate environmental health programs. Students also must be made cognizant of both new and existing regulations which affect the field at local, state, and national levels. Students seeking an MSPH specialize in any of the environmental health areas with an intense research and technical program of study. Individualized courses of study are determined for students with the cooperation of an advisory committee. A thesis is required in addition to the Comprehensive Examination.

Prospective students seeking to enter any of the concentration areas in the department should have a background in college level chemistry, physics, biology and mathematics to ensure successful completion of their chosen programs.

Certificate of Concentration in Solid and Hazardous Waste Management See College of Engineering, page 133.

Environmental Health

The Environmental Health concentration area in the College of Public Health performs a vital function in supplying the state of Florida with professionals capable of addressing existing and burgeoning problems in environmental health.

MPH students are expected to complete the following minimum requirements:

College of Public Health Core Courses (15 hours)

Environmental Health Concentration Area (15 hours)

PHC 6301 (3) PHC 6310 (3) PHC 6303 (3) PHC 6512 (3)

PHC 6356 (3)

Approved Electives (5 hours)

Special Project (3 hours)

Seminar (1 hour)

Field Experience (if applicable) (1-12 hours)

Comprehensive Examination

MSPH students must complete 9 hours of approved college core, 24 hours in selected areas, a thesis, and the Comprehensive Examination.

Toxicology

The objectives in this concentration area will provide a broad foundation in the biomedical sciences with a general and specialized training in toxicology which will enable the students to assume leadership roles in the field of toxicology.

Employment opportunities for students graduating from this program include administration of toxicology programs, regulation, teaching, and service positions in environmental/occupational toxicology in public and private sectors of the State of Florida and the nation.

MPH students are expected to complete the following minimum requirements:

College of Public Health Core Courses (15 hours)

Toxicology Concentration area (15 hours)

HSC 6556 (3) PHC 6511 (3) PHC 6310 (3)
 BCH 5045 (3) or equivalent PHC 6934 (3)

Approved Electives (5 hours)

Special Project (3 hours)

Seminar (1 hour)

Field Experience (if applicable) (1-12 hours)

Comprehensive Examination

MSPH students must complete 9 hours of approved college core, 24 hours in selected areas, a thesis, and the Comprehensive Examination.

Tropical Public Health/Communicable Disease

The objective of a concentration in Tropical Public Health/Communicable Disease is to provide an opportunity for science-oriented students with interest in communicable diseases and health problems in Florida and developing nations to receive specialized training both in the laboratory and in the classroom.

Preference for admission will be given to students with a background or demonstrated skills in the biological sciences. To date, students interested in this program have come from baccalaureate degree programs in the USF College of Natural Sciences, other Florida universities, and abroad.

MPH students are expected to complete the following minimum requirements:

College of Public Health Core Courses (15 hours)

Tropical Public Health/Communicable Disease Concentration Area (15 hours)

PHC 6511 (3) PHC 6510 (3) PHC 6513 (3) PHC 6512 (3)
 PHC 6006 (3)

Approved Electives (5 hours)

Special Project (3 hours)

Seminar (1 hour)

Field Experience (if applicable) (1-12 hours)

Comprehensive Examination

MSPH students must complete 9 hours of approved College core, 24 hours in selected areas, a thesis, and the Comprehensive Examination.

Industrial Hygiene and Safety Management

The Industrial Hygiene and Safety Management concentration plays a critical role in efforts to confront the state's serious industrial hazard problems. Study is in the areas of industrial health hazards, safety management, legal and regulatory considerations, and program evaluations.

Coursework in the Industrial Hygiene/Safety Management concentration for the MPH and MSPH is being updated to meet the changing needs of professionals in these areas. These programs will include the following proposed coursework:

MPH Concentration

College Core Courses (15)

Concentration Area Courses (12)

PHC 6310 (3) PHC 6356 (2) PHC 6360 (2) PHC 6361 (2)
 PHC 6425 (3)

Electives (8)

PHC 6303 (3) PHC 6306 (2) PHC 6350 (3) PHC 6355 (3)
 PHC 6358 (2) PHC 6362 (2) PHC 6363 (2) PHC 6364 (2)
 PHC 6365 (2) PHC 6366 (2) PHC 6934

Other approved electives from the Department of Health Policy and Management, Community and Family Health, Industrial Engineering, or the College of Business may be selected.

Special Project (3)
Seminar (1)
Total (39)
Comprehensive Examination

MSPH Concentration

College Core Courses (9)

Concentration Area Courses - Required (22)

PHC 6310 (3)	PHC 6356 (2)	PHC 6358 (2)	PHC 6360 (2)
PHC 6361 (2)	PHC 6362 (2)	PHC 6363 (2)	PHC 6365 (2)
PHC 6366 (2)	PHC 6425 (3)		

Electives (4)

PHC 6303 (3)	PHC 6306 (2)	PHC 6350 (3)	PHC 6355 (3)
PHC 6364 (2)	PHC 6934 (3)		

Thesis (6)

Seminar (1)

Comprehensive Examination

Occupational Health for Health Professionals

The Master of Public Health concentration in Occupational Health for Health Professionals is intended for physicians and nurses who are interested in pursuing a career in occupational health care. Non-medical professionals may also be considered for admission. The principal concerns of the occupational health professional are 1) the worker 2) the work environment and 3) chemical, physical, ergonomic, and biological agents in the workplace. The curriculum is interdisciplinary in nature and scope, addressing topics in these broad areas. Because of the diversity of experience and interest of the students in this program, 9 credit hours are available for elective courses in a specific area.

MPH students are expected to complete the following minimum requirements:

MPH Core Courses (15 hours)

PHC 6930 (1)

Departmental Core Courses (12 hours)

PHC 6355 (3)	PHC 6310 (3)	PHC 6425 (3)	PHC 6356 (3)
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Approved Electives (9 hours)

Areas of Concentration Include:

Occupational Health

Occupational Health Research

Occupational Health Administration

Hazardous Waste Health

Special Project (3 hours) PHC 6977

Comprehensive Examination

Ph.D Requirements Specific information concerning the doctoral program can be obtained from the College of Public Health Office of Academics.

Department of Health Policy and Management

The primary aim of the Health Policy and Management (HPM) curriculum is to prepare persons for leadership positions in health care delivery. Teaching goals of the health policy and management faculty are specifically designed to train public health administrators, health policy analysts and planners, and managers of traditional and alternative health care delivery systems for service in the state of Florida, the nation and abroad. Three specialty areas are offered in the health policy and management concentration. Each of these tracks draws first on a general core of coursework in health care management, economics and finance, and health policy and politics and then on the more specialized knowledge needed to pursue various career options in the field of health policy and management. The course requirements for the three HPM specialty areas or tracks leading either to the MPH or MSPH degrees are described below.

To ensure that students learn how technical knowledge is applied to health care problems or issues, the HPM curricular program requires, in addition to completing the coursework described below, that each Master's degree candidate submit a professional-quality paper to the HPM Archive as a condition for graduation. This Archive requirement may be satisfied by submitting with the approval of an advisor either (1) a manuscript completed in any one of several designated HPM seminars that require an extensive, problem-oriented term paper or (2) the project paper ordinarily written in conjunction with field experience in community-based health care programs.

Master of Public Health (MPH)

Health Care Organizations and Management

The health care industry in the United States increasingly requires skilled management talents in all aspects of organization, delivery, and financing. Health care management responsibilities include: planning, resource acquisition and allocation, implementation, monitoring, analysis, and evaluation. This track is designed for individuals interested in such management positions, especially those at mid-career who anticipate advancement or transition from technical to managerial responsibilities. Required courses emphasize the competencies and conceptual frameworks associated with effective health management practice. Electives permit specialization in several areas, including finance, marketing, health care information systems, and evaluation. Course requirements include:

College of Public Health Core Courses (15 hours)

Health Policy and Management Core Courses (9 hours)

HPM/PHC 6180 (3) HPM/PHC 6430 (3) HPM/PHC 6151 (3)

Health Care Organizations and Management Track (15 hours)

Choose 3 of the following 4:

HMP/PHC 6160 (3) HMP/PHC 6181 (3) HPM/PHC 6191 (3) HPM/HSA 6196 (3)

Approved Electives (6 hours)

Special Project (as needed) (3)

Field Experience (as needed) (1-12 hours)

Comprehensive Examination

Health Policies and Programs

This area is designed to provide more specialized education and training related to national, state, and local health policies as well as to both public and private sector health and medical care programs. Required courses emphasize theory and methods in policy analysis and program evaluation. Elective courses focus on substantive areas of interest and emphasize application, with students being encouraged to select elective courses from other USF departments as appropriate. Course requirements include:

College of Public Health Core Courses (15 hours)

Health Policy and Management Core Courses (9 hours)

HPM/PHC 6180 (3) HPM/PHC 6430 (3) HPM/PHC 6151 (3)

Health Policies and Programs Track (15 hours)

HPM/PHC 6150 (3) HPM/PHC 6191 (3) HPM/PHC 6760 (3)

HPM/PHC 6XXX (3)*

Approved Electives (6 hours)

Special Project (as needed) (3 hours)

Field Experience (as needed) (1-12 hours)

Comprehensive Examination

*Course is not yet being offered.

International Health Management

This track prepares individuals to work either abroad or at home in the international health system, with special emphasis given to managerial positions in international agencies and organizations. Students are expected to learn the principles and techniques of the health policy and management disciplines relevant to any geographic area and the cultural, socioeconomic and technological conditions of foreign nations, especially in Third World nations, that mediate the character and scope of needed health policies and management practices. Required courses emphasize the

application of these principles to international health issues and settings. Elective courses emphasize particular applications in terms of either specific management techniques or foreign cultures. Course requirements include:

- College of Public Health Core Courses (15 hours)**
- Health Policy and Management Core Courses (9 hours)**
- HPM/PHC 6180 (3) HPM/PHC 6430 HPM/PHC 6151 (3)
- International Health Management Track (15 hours)**
- HPM/PHC 6110 (3) HPM/PHC 6111 (3) HPM/PHC 6146 (3)
- PHC 6XXX (3)*
- Approved Electives (6 hours)**
- Special Project (as needed) (3 hours)**
- Field Experience (if applicable) (1-12 hours)**
- Comprehensive Examination**
- * Course is not yet being offered.

Master of Science in Public Health

Students who plan to focus primarily in research may select the Master of Science in Public Health in any of the above three tracks in the Department of Health Policy and Management. Requirements include:

- Public Health Approved Core Courses (9)**
- Public Health Seminar (1)**
- Selected Courses (24)**
- Thesis (6)**
- Final Comprehensive Examination**
- Total Credit Hours (40+)**

Master of Health Administration

The MHA degree is designed to provide the competencies needed for careers in the management and financial management of health care organizations, such as hospitals, HMOs, group medical practices, and long term care facilities. In addition, students are prepared for managerial positions in the health care insurance industry, including third party administration, managed benefit programs, and utilization review. The program is designed to educate managers who are able to solve the increasingly complex problems created by rapid changes in the delivery and financing of health care services in the United States.

MHA Curriculum

- Finance and Economics (15 hours)**
- PHC 6160 (3) PHC 6161 (3) PHC 6430 (3) PHC 6433 (3)
- Approved Electives (3)
- Management Concepts and Policy (15 hours)**
- PHC 6102 (3) PHC 6180 (3) PHC 6181 (3) PHC 6151 (3)
- PHC 6XXX: Strategic Management and Marketing of Health Services (3)
- Analytic Skills (15 hours)**
- PHC 6000 (3) PHC 6191 (3) HSA 6196 (3) PHC 6050 (3)
- Approved Elective (3)
- Internship (as required) (0-12 hours)**
- Comprehensive Examination**
- Total Degree Requirements (45-57 hours)**

Ph.D. Requirements Specific information concerning the doctoral program can be obtained from the Department of Health Policy and Management.

Attendance Policy It is the policy of the College of Public Health that a student will not be automatically dropped if they do not attend the first class of each semester. However, it is the responsibility of the student to notify the course instructor or the Office of Academics if they cannot attend the first class.

COURSE DESCRIPTIONS

Courses offered for credit by the University of South Florida are listed in the following pages in alphabetical order by college and subject area.

The first line of each description includes the State Common Course prefix and number (see below), title of the course, and number of credits.

Credits separated by a colon indicate concurrent lecture and laboratory courses taught as a unit:

PHY 3040, 3040L GENERAL PHYSICS AND LABORATORY (3:1)

Credits separated by a comma indicate unified courses offered in different semesters:

AMH 2010, 2020 AMERICAN HISTORY I, II (4,4)

Credits separated by a hyphen indicate variable credit:

HUM 4905 DIRECTED RESEARCH (1-5)

The abbreviation "Var." also indicates variable credit:

MAT 7912 DIRECTED RESEARCH Var.

The following abbreviations are used in various course descriptions:

GR	---	See Grade Point Average minimum for good standing in this Catalog.
PR	---	Prerequisite
CI	---	With the consent of the instructor
CC	---	With the consent of the chairperson of the department or program
CR	---	Co-requisite
Lec	---	Lecture
Lab	---	Laboratory
Dem	---	Demonstration
Pro	---	Problem
Dis	---	Discussion
ML	---	Master's Level
GS	---	Graduate Standing
Rpt	---	May be repeated
UL	---	Upper Level
S/U	---	No Grade, S/U Only

Course Level Definitions:

5000 - 5999 Senior/Graduate Level

6000 - Up Graduate Level

The University reserves the right to substitute, not offer, or add courses that are listed in this catalog.

Architecture Program

Program Director: A. Ratensky; *Professors:* D.A. Crane, A. Ratensky; *Assistant Professors:* S.A. Cooke, J.A. Moore, D.S. Powers.; *Eminent Scholars:* Jonathan Barnett, William Morgan.

ARC 5175 COMPUTER TECHNOLOGY (3) Introduction to the application of computer technology in current architectural practice. The exploration of available software, programs, and computer services for word processing, information handling, specification writing, feasibility analysis, cost estimating, economic performance and life cycle cost analysis, project management (network programming and analysis), computer graphics, computer aided design and drafting. (PR: Intro Computers, ARC 5360)

Architecture

- ARC 5216 THE BUILDING ARTS (3)** Introduction to the man-made environment. The study and profession of architecture. The various facets of the process of shaping the built environment as it manifests itself in the different roles and specializations of the experts involved in the process, and in the various academic courses that prepare the architect for practice.
- ARC 5256 DESIGN METHODS (3)** Survey of major schools of thought in design theory, methods of design and problem-solving, and design research. The nature of the design activity and its recurring difficulties. The nature and different types of problems. Traditional approaches to problem-solving and design in architecture; recent systematic as well as intuitive approaches to problem-solving based on developments in other fields. Scientific method; the systems approach and design. (PR: Calculus, ARC 5360)
- ARC 5359 ARCHITECTURAL DESIGN I (6)** First of two semester Design Fundamentals/Design Graphics sequence focussing on design abstractions and analysis of the factors influencing conceptual design. Emphasis is placed on ordering principles, pattern recognition and utilization, and figure-ground relationships. Development of craftsmanship, drawing as a means to design, and perceptual acuity are stressed.
- ARC 5360 ARCHITECTURAL DESIGN II (6)** Second of a two semester Design Fundamentals/Design Graphics sequence focussing on synthesis of design concepts and application of ordering principles in architectural design applications. Emphasis is placed on developing an understanding and awareness of architectural elements and compositions. Students examine the work of significant architects and use it as a basis for design exploration. Graphic documentation, diagramming, and model studies stressed. (PR: ARC 5359)
- ARC 5363 ARCHITECTURAL DESIGN III (5)** Study of the various phases of the building delivery and design process, and of different approaches to ordering that process in a systematic fashion. The student will use one such systematic approach in the investigation and development of design solutions for a project of moderate scale and complexity. Studies of built form ordering principles, mass/void relationships, scale and proportion, color, texture, contextual relationships, and meaning/imagery. Building technology (awareness of structural organization, services networks, construction processes and materials). Aspects of human behavior as design determinant. (PR: ARC 5360, ARC 5216, ARC 5467, ARC 5587, ARC 5731, ARC 5689)
- ARC 5364 ARCHITECTURAL DESIGN IV (5)** Application of orderly design processes to building projects of moderate complexity and scale. Continued investigation of the relationship between human behavior and the environment. Analysis and integration of site relationships into the development of design solutions. Legal aspects of zoning, building codes, and regulations regarding access for handicapped persons, fire escape, etc. (PR: ARC 5363)
- ARC 5365 ARCHITECTURAL DESIGN V (5)** Investigation of the interaction between user requirements, environmental determinants, site and urban context conditions, technological factors, and design intentions in the development of design solutions for projects of medium scale and complexity. The analysis, design, and coordination of the various resulting systems (structural, circulation, service networks, space zoning and use, environmental control systems at the interface between interior and exterior of a building). Representation of these relationships and systems in diagrams and models, and their manifestation in design and construction details. (PR: ARC 5256, ARC 5364, ARC 5467, ARC 5588, ARC 5689, ARC 5782)
- ARC 5366 ARCHITECTURAL DESIGN VI (5)** Design of multi-purpose buildings of medium to large scale and complexity. Issues of community and neighborhood design as they relate to the design of buildings. Restoration and adaptive re-use of existing historic buildings. Focus on thinking through as well as documenting the complete building system and process. (PR: ARC 5365)
- ARC 5460 INTRODUCTION TO TECHNOLOGY (3)** Introduction to architectural technology, including structures, materials and methods of construction, and environmental controls. Overview of building systems and components and their integration into architectural design projects.
- ARC 5467 MATERIALS AND METHODS OF CONSTRUCTION (4)** Overview of properties of primary materials and construction systems which comprise building structure and enclosure. Emphasis on interface and connection of elements and assemblies, relative to climate, assembly

processes, costs, codes, and craftsmanship. Lab sessions include field trips to manufacturing facilities, construction sites, and preparation of drawings and models of assemblies. (PR: ARC 5460)

ARC 5587 STRUCTURES I (3) Review of static and mechanical principles of materials. Analysis and evaluation for appropriate selection of structural systems and elements. Analysis and design of timber and steel structures, based on moment, shear, and deflection. Fundamentals of wind and seismic design as they apply to wood and steel construction. Truss analysis, beam and column behavior. (PR: Calculus, Physics, and ARC 5460)

ARC 5588 STRUCTURES II (3) Introduction to the concepts and theories of structural analysis and design of reinforced concrete systems and elements, including practical application in building construction. Prestressing, post-tensioning, hybrid assemblies. Fundamentals of wind and seismic design. Formwork, placement, and assembly techniques. (PR: ARC 5587)

ARC 5689 ENVIRONMENTAL TECHNOLOGY (4) Comprehensive review of mechanical, electrical, and plumbing systems for buildings. Energy utilization, heating and cooling, water delivery and waste removal, fire protection, illumination, transportation systems, and acoustics. Lab exercises include computer simulations, illumination studies, thermal performance studies. (PR: Physics, ARC 5460)

ARC 5731 ARCHITECTURAL HISTORY I (3) Overview of the built environment from prehistory through the Middle Ages. Buildings and cities in their geographical, topographical, political, aesthetic, social, technological and economic context. Varieties of methodological approaches to the analysis of historical architecture. The focus will be on the built environment of Europe and the Mediterranean basin.

ARC 5732 ARCHITECTURAL HISTORY II (3) Overview of the built environment from the Renaissance to the present. Buildings and cities in their geographical, topographical, political, aesthetic, social, technological, and economic context. Study of various methodological approaches to the analysis of historic architecture, and development of student's own approach. Emphasis will be on the built environment of Europe and America.

ARC 6176 ADVANCED COMPUTER TECHNOLOGY (3) Elective course dealing with further development of CAD skills, focussing on three-dimensional modeling. A wide range of software programs is included which explores painting and shading, surface textures, 3D detail studies, perspectives, and oblique representations. (PR: ARC 5175)

ARC 6287 PROFESSIONAL PRACTICE I (3) Introduction and overview of professional practice, emphasizing business, organization, management, and marketing. Legal, economic, and ethical aspects of project procurement, design services, and delivery. Contracts, Owner-Contractor-architect roles and responsibilities. (PR: ARC 5216, ARC 5364)

ARC 6288 PROFESSIONAL PRACTICE II (3) Continued overview of professional practice, emphasizing legal, economic, and ethical aspects of practice. Project planning, funding, administration, risk management, and performance. Topics include: estimating, financing, life-cycle cost analysis, information resources and management. (PR: ARC 6287)

ARC 6471 ADVANCED TOPICS IN MATERIALS AND METHODS (3) Analysis and design of advanced construction assemblies. Specific focus on application and integration of multiple systems and components. Research in new materials and methods. Documentation and model and analysis. (PR: ARC 5175, 5587, and 5588)

ARC 6481 DESIGN DEVELOPMENT (4) Summary in technology sequence in which construction, structural, and environmental technology systems are integrated within the context of architectural design projects. Emphasis is placed on the poetic as well as technical aspects of building systems. (PR: ARC 5460, 5587, 5588, 5467, 5689, and a minimum of one of ARC 6692, 6471, or 6596)

ARC 6596 ADVANCED TOPICS IN STRUCTURES (3) Analysis and design of advanced structures; specific focus on architectural applications; integration with electro-mechanical systems. Research of special aspects of structure, computer simulation, and/or preparation of structural models. (PR: ARC 5175, 5587, 5588,)

ARC 6692 ADVANCED TOPICS IN ENVIRONMENTAL TECHNOLOGY (3) Analysis and preliminary design of advanced environmental control systems; specific focus on architectural applications; integration with structural and construction systems. Research of special aspects of ET systems, computer simulation and analysis techniques. (PR: ARC 5175, 5689)

ARC 6971 MASTER'S PROJECT (4-6) The Master's Thesis represents the most significant project in the student's academic preparation for a career in architecture, and the demonstration of the student's ability to synthesize learned skills into a convincing independent work of professional quality. The Master's Thesis will typically be a major design project, although the format of a more traditionally academic thesis is also possible. In either case, the student will work with a committee composed of advisors of his/her choice in selecting the topic of the project, organizing and carrying out the work in a independent and self-paced manner. The outcome should be an original project which demonstrates the student's academic and professional competence according to the state of the art. (PR: ARC 6974)

ARC 6974 MASTER'S PROJECT PLANNING (1-3) The Master's Project (ARC 6971) will call for the student's independent selection, organization, programming and design of a complex project. This course aims at preparing students for these tasks by exploring potential topics for master's projects and theses, introducing the concepts of architectural facility programming, methods of gathering, organization, analysis and evaluation of information needed for the project, and by studying the process of writing proposals for the master's project that clearly communicate the problem or task, goals and objectives, the proposed approach and procedure, the expected outcome, as well as the work plan and schedule for such a project and the time and resources required. At the end of the course, students will have prepared an acceptable master's project proposal which will allow them to proceed with the master's project during the following term. (PR: ARC 5366)

College of Arts and Sciences

AMERICAN STUDIES

Chairperson: J.B. Moore; *Professors:* J.B. Moore, R.E. Snyder; *Associate Professors:* R.A. Baner, P.J. Brewer; *Other Faculty:* R.O. Arsenault, S.D. Greenbaum, N.C. James, S.A. Zylstra.

AMS 6254 DECADE IN DEPTH (3) Open to non-majors. Interdisciplinary analysis of American life during a specific cultural era. Rpt. to 6 hours.

AMS 6375 THE AMERICAN SOUTH (3) Open to non-majors. Examines the region since Reconstruction through architecture, art, literature, photography, music, history and interdisciplinary perspectives.

AMS 6805 MAJOR IDEAS IN AMERICAN CIVILIZATION (3) Open to non-majors. Investigates the role of one or more influential ideas in American culture, e.g., community, domesticity, democracy, slavery, progressivism, radical reform.

AMS 6901 DIRECTED READINGS IN AMERICAN STUDIES (1-3) Open to non-majors. A supervised program of intensive reading. S/U Rpt. to 4 hours. (PR: CI, CC)

AMS 6915 DIRECTED RESEARCH (1-12) Var. Rpt. S/U. (PR: GR, ML)

AMS 6934 SELECTED TOPICS (1-3) Open to non-majors. Variable topics such as American Autobiography, Film in American Culture, and Photography in American Culture.

AMS 6938 SEMINAR IN AMERICAN STUDIES (3) Open to non-majors. Advanced interdisciplinary research. Topics include Popular Culture, Material Culture, Native American Culture.

AMS 6940 INTERNSHIP IN AMERICAN STUDIES (1-3) A structured, out-of-class learning experience providing first hand, practical training in American Studies-related professional careers. Rpt. S/U. (PR: Majors only)

AMS 6971 THESIS: MASTER'S Var. Rpt.

ANTHROPOLOGY

Chairperson: S.D. Greenbaum; *Professors:* M.V. Angrosino, R.T. Grange, Jr., G. Kushner, A. Shiloh, C.W. Wienker, J.R. Williams, A.W. Wolfe; *Associate Professors:* R.D. Baer, S.D. Greenbaum, J.J. Smith, P.P. Waterman, N.M. White; L.M. Whiteford; *Assistant Professors:* S.B. Burkhalter, L. Madrigal; *Other Faculty:* C. Bryant, A. Chairetakis, J. Coreil, N. Greenman, J.N. Henderson, T. Purcell, M.D. Vesperi.

- ANT 5904 DIRECTED READING (1-4)** Individual guidance in concentrated reading on a selected topic in Anthropology. Contract required prior to registration. S/U. (PR: CI)
- ANT 5915 INDIVIDUAL RESEARCH (2-4)** Individual guidance in selected research project. Contract required prior to registration. S/U. (PR: CI)
- ANT 5937 SEMINAR IN ANTHROPOLOGY (2-4)** Topics to be chosen by students and instructor. (PR: Senior or GS)
- ANT 6186 SEMINAR IN ARCHAEOLOGY (3)** One of four core courses required of all students. An advanced critical survey of archaeology emphasizing contributions to applied anthropology. (PR: GS)
- ANT 6196 METHODS IN PUBLIC ARCHAEOLOGY (3)** Field techniques, methods of collection, analysis, and interpretation of data. Rpt. to 6 hours as topics vary. Open to non-majors. Lec/Lab/Field trips. (PR: GS)
- ANT 6197 SELECTED TOPICS IN PUBLIC ARCHAEOLOGY (3)** Current topical issues in Public Archaeology. Rpt. to 6 hours as topics vary. Open to non-majors. (PR: GS)
- ANT 6198 REGIONAL PROBLEMS IN PUBLIC ARCHAEOLOGY (3)** Contemporary problems in Public Archaeology in the context of a specific region. Rpt. to 6 hours as topics vary. Open to non-majors. (PR: GS)
- ANT 6447 SELECTED TOPICS IN URBAN ANTHROPOLOGY (3)** Current topical issues in Urban Anthropology. Rpt. to 6 hours as topics vary. Open to non-majors. (PR: GS)
- ANT 6448 REGIONAL PROBLEMS IN URBAN ANTHROPOLOGY (3)** Contemporary problems in Urban Anthropology in the context of a specific region. Rpt. to 6 hours as topics vary. Open to non-majors. (PR: GS)
- ANT 6469 SELECTED TOPICS IN MEDICAL ANTHROPOLOGY (3)** Current topical issues in Medical Anthropology. Rpt. to 6 hours as topics vary. Open to non-majors. (PR: GS)
- ANT 6490 SEMINAR IN CULTURAL ANTHROPOLOGY (3)** One of four core courses required of all students. A critical advanced survey of Cultural Anthropology emphasizing contributions to Applied Anthropology. (PR: GS)
- ANT 6573 REGIONAL PROBLEMS IN MEDICAL ANTHROPOLOGY (3)** Contemporary problems in Urban Anthropology in the context of a specific region. Rpt. to 6 hours as topics vary. Open to non-majors. (PR: GS)
- ANT 6588 SEMINAR IN PHYSICAL ANTHROPOLOGY (3)** One of four core courses required of all students. A critical advanced survey of Physical Anthropology emphasizing contributions to Applied Anthropology. (PR: GS)
- ANT 6676 SEMINAR IN ANTHROPOLOGICAL LINGUISTICS (3)** One of four core courses required of all students. A critical advanced survey of Anthropological Linguistics emphasizing contributions to Applied Anthropology. (PR: GS)
- ANT 6706 CONTEMPORARY APPLIED ANTHROPOLOGY (3)** A critical survey of Applied Anthropology as practiced today in the major branches of Anthropology, focusing on Applied, Medical, and Urban Anthropology. Open to non-majors. (PR: GS)

Arts and Sciences

- ANT 6766 RESEARCH METHODS IN APPLIED ANTHROPOLOGY (3)** Research design, data collection, and data analysis for Applied Anthropologists with urban and medical interests. Emphasis will be on non-quantitative research methods. Open to non-majors. (PR: GS)
- ANT 6908 INDEPENDENT STUDY** Var. Independent study in which students must have a contract with an instructor. Rpt. S/U.
- ANT 6915 DIRECTED RESEARCH (INTERNSHIP)** Var. S/U. (PR: GR: ML)
- ANT 6971 THESIS: MASTER'S** Var. Rpt.
- ANT 7703 HISTORY AND THEORY OF APPLIED ANTHROPOLOGY (3)** The history and theoretical development of Applied Anthropology, including cultural resources management are discussed in the context of the overall development of Anthropology as a discipline and profession. Open to non-majors. (PR: CI)
- ANT 7704 LEGAL AND ETHICAL ASPECTS OF APPLIED ANTHROPOLOGY (3)** Development and nature of professional ethics in Applied Anthropology, including legal and quasi-legal regulations pertaining to human subjects research, cultural resources management, historic preservation, privacy, and freedom of information. Open to non-majors. (PR: CI)
- ANT 7760 RESEARCH METHODS IN APPLIED ANTHROPOLOGY (3)** Critical review of specific approaches to the development, management, and analysis of sociocultural data. Emphasis on qualitative and quantitative applications of field oriented research designs. Rpt. as topics vary. Open to non-majors. (PR: CI)
- ANT 7902 DIRECTED INDIVIDUAL STUDY (1-15)** An advanced reading program of selected topics in Applied Anthropology under the supervision of an anthropology faculty member. A written contract describing requirements must be signed by the student and faculty member prior to registration. Rpt. S/U. (PR: CI)
- ANT 7912 DIRECTED RESEARCH (1-4)** An advanced directed research program in a selected topic of Applied Anthropology under the supervision of an anthropology faculty member. Rpt. S/U. (PR: CI)
- ANT 7932 SEMINAR IN APPLIED ANTHROPOLOGY (1-4)** A critical examination of problems and issues relevant to contemporary Applied Anthropology, such as the professional practice of Applied Anthropology. Rpt. as topics vary. Open to non-majors. (PR: CI)
- ANT 7933 SELECTED TOPICS IN APPLIED ANTHROPOLOGY (3)** An overview of Applied Anthropology in its relation to a major mode of public/private activity, e.g., planning, clinical practice, policy process, or advocacy. Rpt. as topics vary. Open to non-majors. (PR: CI)
- ANT 7934 THE CLIENTELE OF APPLIED ANTHROPOLOGY (3)** Review of the literature and practice of Applied Anthropology focusing on a specific segment or interest group within contemporary society. Typical offerings include: ethnic minorities, age categories, communities, the poor, migrants, public/private organizations, and industry. Rpt. as topics vary. Open to non-majors. (PR: CI)
- ANT 7936 APPLIED ANTHROPOLOGY AND HUMAN PROBLEMS (3)** Examination of specific problem areas of social significance and policy relevance. Typical offerings include: substance abuse, disease, mental health, international development, urban design, and education. Rpt. as topics vary. Open to non-majors. (PR: CI)
- ANT 7945 DOCTORAL INTERNSHIP IN APPLIED ANTHROPOLOGY (Var.)** Supervised training in practicing Anthropology in a non-academic setting, focusing on the applications of Anthropology. A written contract describing requirements must be signed by the student, the faculty adviser, and the agency supervisor prior to registration. Rpt. S/U. (PR: Admission to Doctoral Candidacy, CI)
- ANT 7980 DISSERTATION: DOCTORAL (Var.)** (PR: Admission to Candidacy)

ASTRONOMY

AST 5506 INTRODUCTION TO CELESTIAL MECHANICS (3) PR: MAC 3413 and some knowledge of differential equations, or Cl. The two-body problem, introduction to Hamiltonian systems and canonical variables, equilibrium solutions and stability, elements of perturbation theory.

AST 5932 SELECTED TOPICS IN ASTRONOMY (1-5) PR: Senior or advanced junior standing or Cl. Intensive coverage of special topics to suit needs of advanced students.

BIOLOGY

Chairperson: J.T. Romeo; *Distinguished Research Professors:* C.J. Dawes, G.E. Woolfenden, *Professors:* M.R. Alvarez, S.S. Bell, B.C. Cowell, F.E. Friedl, G.W. Hinsch, J.M. Lawrence, D.V. Lim, R.L. Mansell, E.D. McCoy, R.C. Richmond, J.T. Romeo, J.L. Simon, S.L. Swihart, D. TeStrake, R.P. Wunderlin; *Associate Professors:* G.W. Arendash, B.J. Cochrane, M.L. Dao, F.B. Essig, P.J. Motta, H.R. Mushinsky, M.J. Saunders, G.J. Stewart; *Assistant Professors:* D.D. Dunigan, S.C. Edwards, M.B. Rogers, P.D. Stilling.

See also offerings under Botany, Microbiology, and Zoology.

BSC 5931 SELECTED TOPICS IN BIOLOGY (1-3) Each topic is a course in directed study under supervision of faculty member.

BSC 6907 INDEPENDENT STUDY Var. Independent study in which student must have a contract with an instructor. Rpt. S/U, (PR: Cl)

BSC 6910 DIRECTED RESEARCH Var. ML. Rpt. S/U.

BSC 6932 SELECTED TOPICS IN BIOLOGY (1-4) (PR: Cl)

BSC 6935 GRADUATE SEMINAR IN BIOLOGY (1) S/U. (PR: Cl)

BSC 6945 GRADUATE INSTRUCTION METHODS (1-3) Special course to be used primarily for the training of teaching assistants. Rpt. to a total of 4 credits per student. (S/U only) (PR: Cl)

BSC 7912 DIRECTED RESEARCH Var. Ph.D. level. Rpt. S/U. (PR: Cl)

BSC 7980 DISSERTATION: DOCTORAL Var. Admission to Candidacy. (PR: Cl)

PCB 5115C CYTOGENETICS (3) Survey of the structure and function of cytoplasmic and nuclear components of plant and animal cells. Lec/Lab. (PR: PCB 3023C)

PCB 5235C PRINCIPLES OF IMMUNOLOGY (3) Course will emphasize the biological principles involved in the vertebrate immune response. It will present the homeostatic, defense, and detrimental aspects of the immune system in terms of basic cellular and molecular mechanisms. Techniques will be described to familiarize the student with the types of immunological tools available to the cellular and molecular biologist. (PR: MCB 3030)

PCB 5415 BEHAVIORAL ECOLOGY (3) An emphasis on the evolutionary mechanisms that influence an organism's behavioral responses to environmental events. The theoretical framework is presented and analyzed. Intended for majors. (PR: PCB 4043)

PCB 5525C MOLECULAR GENETICS (3) Detailed examination of DNA, RNA and protein synthesis; the effects of mutations on proteins, cellular control; selected aspects of viral, bacterial, and fungal genetics. (PR: PCB 3063)

PCB 5615 EVOLUTIONARY GENETICS (3) Study of factors such as mutation, natural selection, and genetic drift that modify the genetic structure of populations. (PR: PCB 3063)

PCB 5835C NEUROPHYSIOLOGY (3) A comparative analysis of the physiochemical basis and evolution of nervous systems and sensory mechanisms. (PR: PCB 3023C)

PCB 5845 PRINCIPLES OF NEUROSCIENCE (3) Study of the mammalian brain's structure and function, with an emphasis on the neuroanatomy, neuropharmacology, and neurophysiology of the human brain. Topics include brain imaging, dementia, and mechanisms of learning/memory. Brain research techniques are also discussed, as are basic neuropathological processes that result in abnormal brain function. (PR: PCB 4743C and GS or Cl)

PCB 6176C BIOLOGICAL ELECTRON MICROSCOPY (5) Discussion of theory and techniques in electron microscopy. Emphasis on preparation of biological microscope. Lec/Lab. (PR: PCB 3023C and C1)

PCB 6405 CHEMICAL ECOLOGY (3) A broad introduction to the biochemistry of plant and animal interactions. Emphasis on the roles of secondary metabolites such as alkaloids, flavonoids, and terpenes in the complex animal/animal, animal/plant, plant/plant, and plant/microorganism interactions occurring in natural, terrestrial, and aquatic environments. (PR: PCB 4043 and CHM 3200)

PCB 6426C POPULATION BIOLOGY (3) Introduction to population dynamics with emphasis on the ecological components of growth, competition, and predation. (PR: PCB 4043C)

PCB 6456C BIOMETRY (3) An introduction to statistical procedures for research in biological sciences. Experimental design, analysis of data, and presentation of results are emphasized. Lec/Dis. (PR: MAC 2243 and MAC 2244)

PCB 6458 BIOMETRY II (3) Fundamental concepts in the design of experiments for biological research. Factorial experiments, multiple regression analyses, analyses of covariance and SAS computer programs are emphasized. Lec/Lab. (PR: PCB 6456C)

BOTANY

See also offerings under Biology, Microbiology and Zoology.

BOT 5185C MARINE BOTANY (4) A field course in marine plants with emphasis on ecology and functional morphology. Field work will stress the ecological aspects of plants in a subtropical marine environment in Florida. Lec/Lab. (PR: PCB 4043C)

BOT 6716C BIOCHEMICAL SYSTEMATICS (4) Application of chemistry to the study of evolution and classification of species of higher plants. Lec/Lab. (PR: BOT 3713C or equiv.)

BOT 6725C EVOLUTION OF FLOWERING PLANTS (3) A study of the evolution and phylogeny of the Angiosperms; the origin and nature of early angiosperms, "primitive" angiosperms today; evolutionary processes leading to the origin of genera, families and orders, trends of specialization in the angiosperms; phylogenetic analysis, cladistics, traditional approaches, new approaches; readings from the current and historical literature. Lec/Lab. (PR: POT 3373C, BOT 4713C)

BOT 6916 INDEPENDENT STUDY Var. Independent study in which students must have a contract with an instructor. Rpt. S/U. (PR: C1)

BOT 6971 THESIS: MASTER'S Var. Rpt. (PR: C1)

CHEMISTRY

Chairperson: S.W. Schneller; *Associate Chairpersons:* J.C. Davis, Jr., D.F. Martin; *Assistant Chairperson:* T.M.Oestreich; *Distinguished Research Professors:* R.N. Castle, G.R. Newkome, B. Stevens; *Professors:* J.S. Binford, Jr., R.S. Braman, J.C. Davis, Jr., J.E. Fernandez, G.R. Jurch, Jr., L. Mandell, D.F. Martin, G.G. Meisels, E.D. Olsen, T.C. Owen, S.W. Schneller, J.H. Worrell; *Associate Professors:* S.H. Grossman, M.D. Johnston, Jr., R.M. O'Malley, J.A. Stanko, J.E. Weinzierl, G.R. Wenzinger; *Assistant Professors:* A.T. D'Agostino, L.-J. Ming, R.L. Potter, J. Robert.

BCH 5045 BIOCHEMISTRY CORE COURSE (3) A survey course for graduate students in Chemistry, Biology, and other appropriate fields. Lec. (PR: Either CHM 3211, CHM 3211L, and CHM 3400 or CHM 4410 or GS)

BCH 6066 GENERAL BIOCHEMISTRY I (3) First semester of a rigorous two-semester General Biochemistry course for Chemistry and Biology students whose primary interests are in this field. Lec. (PR: BCH 5045 or C1)

BCH 6067 GENERAL BIOCHEMISTRY II (3) Continuation of BCH 6066. Lec. (PR: BCH 6066)

- BCH 6706 ADVANCED BIOCHEMISTRY II: BIOORGANIC MECHANISMS (3)** A study of biochemical systems with emphasis on mechanisms of biological reaction. Lec. (PR: BCH 6067 or CI)
- CHM 5225 INTERMEDIATE ORGANIC CHEMISTRY (3)** This course will extend Organic Chemistry beyond the undergraduate level and will emphasize concepts of stereochemistry and reaction mechanisms. (PR: CHM 3211, CHM 3211L, or equiv.)
- CHM 5226 INTERMEDIATE ORGANIC CHEMISTRY II (3)** An introduction to synthetic organic chemistry for graduate and undergraduates. Lec. Semester II. (PR: CHM 5225 or CI)
- CHM 5425 APPLICATIONS IN PHYSICAL CHEMISTRY (3)** Applications of chemical theory to chemical systems. (PR: CHM 4412)
- CHM 5452 POLYMER CHEMISTRY (3)** Fundamentals of polymer synthesis, structure, properties, and characterization. (PR: Either CHM 3211, CHM 3211L, and CHM 3400 or CHM 4410 or GS)
- CHM 5621 PRINCIPLES OF INORGANIC CHEMISTRY (3)** Chemical forces, reactivity, periodicity, and literature in organic chemistry; basic core course. Lec. (PR: CHM 4411 or CI)
- CHM 5931 SELECTED TOPICS IN CHEMISTRY (1-3)** The following courses are representative of those that are taught under this title: Natural Products, Stereochemistry, Reactive Intermediates, Photochemistry, Instrumental Electronics, Advanced Lab Techniques, Heterocyclic Chemistry, etc. S/U (PR: CI)
- CHM 6150 ADVANCED ANALYTICAL CHEMISTRY (3)** A study of complete analytical process, including sample handling, separations, the analysis step, and statistical interpretation of data. Emphasis placed on separations and statistics. Lec. (PR: CI)
- CHM 6153 ELECTROCHEMISTRY (3)** Introduction to the theory of ionic solutions and electrode processes. Theory and applications and electrochemical measurements. Lec. (PR: CI)
- CHM 6250 ADVANCED ORGANIC CHEMISTRY I: SYNTHESIS (3)** Detailed consideration of modern synthetic methods. Lec. (PR: CHM 5225)
- CHM 6260 ADVANCED ORGANIC CHEMISTRY II: PHYSICAL-ORGANIC (3)** Organic reaction mechanisms emphasizing the interpretation of experimental data. Lec. (PR: CHM 5225)
- CHM 6280 ADVANCED ORGANIC CHEMISTRY III: NATURAL PRODUCTS (3)** A study of any of several of the following topics: terpenes, steroids, vitamins, alkaloids, porphyrins, purine, and antibiotics. (PR: CHM 5225 or CI)
- CHM 6440 CHEMICAL KINETICS (3)** Theory and methods for the study of reaction rates and the elucidation of reaction mechanisms. Lec. (PR: CI)
- CHM 6460 STATISTICAL THERMODYNAMICS (3)** Application of statistical mechanics to the thermodynamics; relation of molecular structure to thermodynamic properties. Lec. (PR: CI)
- CHM 6480 QUANTUM CHEMISTRY (3)** Introduction to elementary quantum mechanism, Atomic structure and spectra. Lec. (PR: CI)
- CHM 6625 CHEMISTRY OF THE LESS FAMILIAR ELEMENTS (3)** An integrated treatment of the conceptual and factual aspects of the traditionally less familiar elements, including noble gas elements, unfamiliar non-metals, alkali, and alkaline-earth metals and the transition elements. Lec. (PR: CI)
- CHM 6650 STRUCTURAL INORGANIC CHEMISTRY (3)** Modern theories of bonding and structure of inorganic compounds, including coordination theory, stereo-chemistry, solution equilibria, kinetics, mechanisms of reactions, and use of physical and chemical methods. Lec. (PR: CHM 5621 or CI)
- CHM 6907 INDEPENDENT STUDY** Var. Independent study in which students must have a contract with an instructor. Rpt. S/U.

CHM 6935 GRADUATE SEMINARS IN CHEMISTRY (1) Required every semester (when offered) for all students enrolled in Chemistry graduate program. Requires participation in and attendance at the weekly departmental seminar. Must be repeated. S/U. (PR: Admission to graduate program in Chemistry)

CHM 6936 CHEMISTRY COLLOQUIUM (1) Frequent (usually weekly) small-group analysis of current developments. Rpt. to a total of 10 hours. S/U. (PR: Admission to graduate program in Chemistry)

CHM 6938 SELECTED TOPICS IN CHEMISTRY (1-3) Representative titles taught include: Symmetry and Group Theory, Photochemical Kinetics, Quantum Mechanical Calculations, Advanced Chemical Thermodynamics, Reaction Mechanisms, Advanced Instrumentation, Separations and Characterizations, Spectroscopy, etc. (PR: CI)

CHM 6946 GRADUATE INSTRUCTION METHODS (1-4) Special course for the training of teaching assistants. Var. Rpt. to a total of 5 hours. S/U.

CHM 6971 THESIS: MASTER'S Var. Rpt. (PR: GR. M.L.)

CHM 6973 DIRECTED RESEARCH Var. Rpt. S/U. (PR: GR. M.L.)

CHM 7820 DIRECTED RESEARCH Var. Rpt. S/U. (PR: GR. Ph.D. level)

CHM 7980 DISSERTATION: DOCTORAL Var. (PR: Admission to Candidacy)

CLASSICS

Director: TBA *Professor:* A.L. Motto; *Associate Professor:* J.D. Noonan; *Assistant Professor:* J. Campbell; *Other Faculty:* J.R. Clark, W.H. Murray, J.F. Strange, G.K. Tipps.

Greek

GRW 5905 DIRECTED READING (1-4) Departmental approval required.

GRW 5934 SELECTED TOPICS (4) Study of an author, movement, or theme of ancient Greece. Open to non-majors.

Latin

LNW 5900 DIRECTED READING (1-4) Departmental approval required. S/U.

LNW 5934 SELECTED TOPICS (4) Study of an author, movement, or theme. Rpt. to 12 credit hours.

LNW 6325 ROMAN ELEGIAC POETS (3) Readings in Catullus, Propertius, Tibullus. Study of technique and tradition in Roman lyric poetry.

LNW 6505 ROMAN PHILOSOPHY (3) Readings in the philosophic writings of Cicero, Seneca, and Lucretius, together with an examination of Stoic, Epicurean, and Eclectic thought.

LNW 6655 HORACE (3) Readings in the Odes and Epodes of Horace; study of the Ode's tradition.

LNW 6665 VERGIL (3) Readings in the Aeneid, the Eclogues, and the Georgics.

LNW 6910 SUPERVISED RESEARCH (3) CC.

LNW 6940 SUPERVISED TEACHING (3) CC.

COMMUNICATION

Chairperson: T.L. Albrecht; *Professors:* T.L. Albrecht, A.P. Bochner, K.N. Cissna, P.J. Newcombe, L.S. Pettegrew, R.J. Schneider; *Associate Professors:* B.F. Downs, C.J. Jablonski, N.C. James, D. Payne, M.L. Vanderford; *Assistant Professors:* M. Garko, M. Neumann; *Other Faculty:* D.H. Smith.

COM 5930 TOPICS IN COMMUNICATION STUDIES (3) Topical issues in communication. Rpt. up to 12 hours as topics vary.

COM 6001 GRADUATE STUDY IN COMMUNICATION (3) Required of all M.A. candidates. The aims and methodologies of the graduate discipline of communication: its relationship to the

- adjacent arts and sciences; bibliographical resources; methods of research; and a brief survey of the historical development of the field with emphasis on current issues in theory, research, and practice.
- COM 6025 HEALTH COMMUNICATION (3)** Application of communication theory and research to the health context including provider-patient communication, health information campaigns, and health beliefs and behavior. Special attention to the value issues in health communication. (PR: GS)
- COM 6121 ORGANIZATIONAL COMMUNICATION (3)** A study of communication theory and behavior within organizational settings: role of communication, communication climates, communication networks, leadership.
- COM 6345 CONTEMPORARY CULTURAL STUDIES (3)** Examines theoretical issues and interpretive approaches for exploring questions of knowledge, identity, experience, meaning and value in modern culture through the study of communication. (PR: GS)
- COM 6400 COMMUNICATION THEORY (3)** An examination of communication theory through selected reading in the works of major theorists past and present. (PR: COM 6001)
- COM 6605 MEDIA STUDIES (3)** Study of the impact of mass and mediated forms of communication on individuals, groups, societies, and cultures. Several theoretical and critical perspectives are considered. (PR: GS)
- COM 7325 SEMINAR IN COMMUNICATION RESEARCH METHODS (3)** Emphasis on quantitative, qualitative, and historical-critical approaches to communication research. Rpt. up to 12 hours as topics change. (PR: GS)
- COM 7933 SEMINAR IN COMMUNICATION STUDIES (3)** Variable topics course. Rpt. up to 12 hours as topics change. (PR: GS)
- ORI 5930 TOPICS IN PERFORMANCE GENRES (3)** Variable topics course. Rpt. up to 12 hours as topics change.
- ORI 6435 PERFORMANCE AS CULTURAL STUDY (3)** Impact of performance and performance forms as cultural communication. The course examines literary, festive, religious, political and social performance in dialogue with culture. (PR: GS)
- ORI 6930 COMMUNICATION AESTHETICS (3)** This course examines the historical evolution of the aesthetic dimension of communication as performance in terms of major concepts and theorists from Plato to the present.
- ORI 7930 SEMINAR IN PERFORMANCE STUDIES (3)** Variable topics course. Rpt. up to 12 hours as topics change. (PR: GS)
- SED 6943 GRADUATE INSTRUCTION METHODS (1-4)** Special course to be used primarily for the training of teaching assistants. Var. Rpt. to a total of 4 credits. (S/U only)
- SPC 5238 TOPICS IN RHETORICAL ANALYSIS (3)** Introduces a variety of critical perspectives applied to rhetoric in specialized contexts. Topics vary depending upon interest of students and faculty. Rpt. up to 12 hours.
- SPC 5912 RESEARCH (1-4)** (PR: Senior or GS and CI)
- SPC 5930 TOPICS IN DISCOURSE (3)** Variable topics course. Rpt. up to 12 hours.
- SPC 6231 SURVEY OF RHETORICAL THEORY (3)** Historical development of rhetorical theory from Plato to contemporary theorists with emphasis upon the evolution of trends and concepts in rhetorical theory.
- SPC 6236 CONTEMPORARY RHETORICAL THEORY (3)** Basic texts in 20th century rhetorical theory. Readings may vary. (PR: GS)

Arts and Sciences

- SPC 6391 SEMINAR INTERPERSONAL COMMUNICATION (3)** Study of theory and research related to interpersonal communication.
- SPC 6545 PERSUASION (3)** Study of contemporary theories and research in persuasion.
- SPC 6645 RHETORIC IN SOCIETY (3)** Examination of ways in which rhetoric reflects and molds social processes, including social integration and/or alienation; social roles and identity construction; institutions and movements; ideology and social change. (PR: GS)
- SPC 6682 RHETORICAL CRITICISM (3)** The study of theoretical perspectives in rhetorical criticism. The application of criticism to selected rhetorical situations.
- SPC 6903 DIRECTED READINGS (1-4)**
- SPC 6913 DIRECTED RESEARCH (1-19)** Rpt. S/U. (PR: ML)
- SPC 6934 SELECTED TOPICS IN COMMUNICATION (1-4)**
- SPC 6935 PROSEMINAR IN COMMUNICATION (1-3)** Reading and discussion of current books, articles, and papers in communication theory and research. May be repeated for credit with different subject matter. (PR: GS)
- SPC 6971 THESIS: MASTER'S (1-19)** Rpt.
- SPC 7900 DOCTORAL RESEARCH TUTORIAL (1-3)** Advanced directed research. (PR: Admitted to doctoral program)
- SPC 7920 COMMUNICATION COLLOQUIUM (1-3)** Reading and discussion of current books, articles and papers in communication theory and research and presentation of students' research and writing for critical discussion. (PR: Admission to doctoral program)
- SPC 7930 SEMINAR IN RHETORICAL STUDIES (3)** Variable topics course. Rpt. up to 12 hours. (PR: GS)
- SPC 7980 DISSERTATION: DOCTORAL** Var. Rpt. (PR: Admission to candidacy)

COMMUNICATION SCIENCES AND DISORDERS

Chairperson: A.M. Guilford; *Distinguished Professor:* S.O. Richardson; *Professors:* A.M. Guilford, S.I. Ritterman, J.F. Scheuerle, D.C. Shepherd, E.R. Silliman, W. Strange; *Associate Professor:* J.B. Crittenden; *Assistant Professors:* T. Chisolm, B. Loeding, L. Mack Hayes; *Instructors:* W.T. Collins, S. Diehl, N. Diss, C. Fernandez, H. Techler, M. Witkind; *Lecturer Emeritus:* E.A. Lee Kasan; *Other Faculty:* J. Becker, K. Hollahan, J. Jenkins.

- SPA 5132 AUDIOLOGY INSTRUMENTATION (2)** Calibration, usage, and specific applications of specialized instruments available in dealing with the identification and measurement of hearing disorders. (PR: CI)
- SPA 5150 ADVANCED SPEECH SCIENCE (3)** Advanced study of the acoustics, production, and perception of normal and disordered speech. (PR: SPA 3011 or equiv.)
- SPA 5150L SPEECH SCIENCE INSTRUMENTATION (2)** May be taken with SPA 5150 or independently. Laboratory exercises in the use of audio recording, acoustic analysis, and synthesis instrumentation. (PR: SPA 3117 or equiv.)
- SPA 5303 ADVANCED: HEARING SCIENCE (3)** The study of the physiological acoustics of the auditory periphery; the neuroanatomy and electrophysiology of the central auditory system; and psychoacoustic principles as they relate to clinical audiologic measurement paradigms.
- SPA 5312 PERIPHERAL AND CENTRAL AUDITORY TESTS (4)** The study of behavioral and electrophysiologic clinical tests designed to assess the functions of the peripheral and the central auditory system. Tests that incorporate nonspeech stimuli and those that utilize speech stimuli will be included. (PR: CI)
- SPA 5328 AURAL REHABILITATION: ADULTS (3)** This course is designed to provide information about and strategies for aural rehabilitation intervention with hearing-impaired

adults. Topics covered include: speech reading, auditory training, hearing and assistive listening devices.

SPA 5403 COMMUNICATION DISORDERS: LANGUAGE (3) Examination of research and clinical literature presenting major theoretical orientations pertaining to the etiology, evaluations, and treatment of those factors that hinder or interrupt normal language acquisition or function. (PR: CI)

SPA 5408 LANGUAGE-LEARNING IN THE SCHOOL-AGE YEARS (3) Metalinguistic and metacognitive development are linked to the interactional demands of classroom and clinical discourse; observational tools are applied to evaluation and intervention planning.

SPA 5506 SPEECH-LANGUAGE PATHOLOGY AND AUDIOLOGY PRACTICUM (1-8) Participation in Speech-Language Pathology and Audiology Practicum in the University clinical laboratory and selected field settings. (PR: CI)

SPA 5552 DIAGNOSTIC PRINCIPLES AND PRACTICES (2) The administration, evaluation, and reporting of diagnostic tests and procedures used in assessment of speech and language disorders. (PR: Admission to the program or CI)

SPA 6106 NEUROLOGICAL CORRELATES OF LANGUAGE (3) Review of the anatomy and physiology of the nervous system. Discuss neurological correlates of receptive and expressive language in verbal and non-verbal transmission and feedback. (PR: CC or delegate)

SPA 6232 NEUROMOTOR COMMUNICATION DISORDERS (3) A study of the medical, physical, occupational, speech, language, and hearing problems of the neuro-motorically impaired client. Therapy techniques are reviewed and evaluated. (PR: CI)

SPA 6245 CRANIOFACIAL COMMUNICATION DISORDERS (3) An indepth study of speech, language, and hearing problems associated with cleft lip and cleft palate and other craniofacial dysmorphologies. Consideration is given to a multidisciplinary approach to therapy and rehabilitation. (PR: CI)

SPA 6305 CHILD AUDIOLOGY (3) Etiologies and manifestations of hearing loss within a pediatric population. Survey of procedures used in early identification and quantified measurement of hearing loss in young and non-communicative children. (PR: SPA 5312)

SPA 6314 ELECTROPHYSIOLOGIC AUDIOLOGY: EVOKED POTENTIALS (3) Theories and clinical methods of using auditory evoked potentials to assess the neural-integrity of the brainstem, gain estimates of auditory sensitivity and explore cognitive behaviors. (PR: SPA 5303 and SPA 5312 or CI)

SPA 6316 ELECTROPHYSIOLOGIC AUDIOLOGY: ELECTRONYSTAGMOGRAPHY (ENG) (3) Principles and clinical practices of assessing the peripheral and central components of the human vestibular system using electrical recordings of induced and spontaneous nystagmus. (PR: SPA 5303 and SPA 5312 or CI)

SPA 6322 AURAL REHABILITATION: CHILDREN (3) A careful analysis of the visual and auditory sense modalities as input systems used to facilitate communication in the hearing impaired. Methods employed in the habilitation of both modalities will be presented. (PR: CI)

SPA 6326 CURRICULUM PROCEDURES AND MATERIALS FOR THE HEARING IMPAIRED (3) Curricular adaptation, methods and techniques, and organization necessary for teaching the hearing impaired. (PR: Major in Aural Rehabilitation or CI)

SPA 6329 READING FOR THE HEARING IMPAIRED (2) Techniques and materials for teaching reading to children with auditory disorders. Evaluation and analysis of contemporary programs and methods. (PR: RED 4310, RED 4515, major in Aural Rehabilitation, and CI)

SPA 6345 HEARING AIDS (3) Interpretation of hearing test data as it relates to the selection of hearing aids and the planning of rehabilitation programs for the hearing impaired.

- SPA 6354 HEARING CONSERVATION (3)** An investigation of the hazardous properties of noise and their effects upon the human auditory systems; hearing conservation programs in industry; and the extra-aural effects and control of community noises.
- SPA 6388 ADVANCED MANUAL COMMUNICATIONS AND BASIC INTERPRETING (2)** A continuation of basic courses that expands students signing skills and presents an exposition of sign systems aimed at signing in an English language context. (PR: SPA 4382 or equivalent and CI)
- SPA 6401 PEDIATRIC LANGUAGE DISORDERS (3)** An examination of the pre-verbal and language skills of the infant and preschool child, and of the Speech-Language Pathologist's role in the diagnosis, treatment, and as parent-trainer for these children. (PR: CI)
- SPA 6410 APHASIA AND RELATED DISORDERS (3)** A consideration of the neurological and psychological aspects of aphasia and related disorders as they relate to communication disorders. Specific language therapy approaches are discussed and evaluated. (PR: CI)
- SPA 6413 AUGMENTATIVE AND ALTERNATIVE COMMUNICATION (3)** This course details the indepth assessment and treatment of non-speaking individuals. Students will be presented with the variety of aided and unaided systems which exist for helping non-speaking persons; students gain experience in the use of these devices.
- SPA 6415 NEUROLINGUISTIC THEORIES OF LANGUAGE (3)** Neurolinguistic theories as appropriate to the discipline are presented and discussed in relationship to language development and disorders. Information from linguistics, psycho-linguistics, artificial intelligence, neuroanatomy, and other sciences are applied to Language Science. (PR: CI)
- SPA 6421 LANGUAGE FOR THE HEARING IMPAIRED (3)** Techniques and materials of teaching language to children with auditory disorders as well as evaluation and analysis of contemporary methods. (PR: SPA 3030, SPA 3310, SPA 4363, or CI)
- SPA 6422 SPEECH PERCEPTION AND PRODUCTION FOR THE HEARING IMPAIRED (3)** Application and evaluation of techniques for teaching symbolic functioning to children with hearing impairments including the consideration of developmental and remedial aspects of reading. (PR: SPA 3030, SPA 3310, SPA 4363)
- SPA 6505 PRACTICUM (1-9)** Participation in speech-language pathology and audiology practicum in the University clinical laboratory and selected field settings. (PR: CI)
- SPA 6553 ADVANCED DIFFERENTIAL DIAGNOSIS AND TREATMENT PLANNING (3)** The interpretation of evaluation results and the integration of these data in order to make a differential diagnosis leading to an appropriate therapy plan. The administration, evaluation, and reporting of advanced evaluation techniques not covered in SPA 5552. (PR: CI)
- SPA 6601 CLINICAL PRACTICE ISSUES IN COMMUNICATION DISORDERS (1)** Topics include: legal and ethical issues affecting practice, licensure, and ASHA certification, the ASHA Code of ethics, laws and regulations governing practice in health care and educational settings, quality assurance standards.
- SPA 6805 RESEARCH PROCEDURES IN COMMUNICATION SCIENCES AND DISORDERS (2)** Advanced research and experimental design techniques employed in clinical and laboratory settings in speech-language pathology and audiology. (PR: CI)
- SPA 6906 INDEPENDENT STUDY (Var.)** Independent study in which students must have a contract with an instructor. Rpt. S/U.
- SPA 6910 DIRECTED RESEARCH (Var.)** Rpt. S/U. (PR: GR, ML)
- SPA 6930 SELECTED TOPICS (3)** A reading program of topics in speech pathology and/or audiology conducted under the supervision of a faculty member. Rpt. 3 times. (PR: CI)
- SPA 6971 THESIS: MASTER'S (Var.)** Rpt.

SPA 7931 SEMINAR IN COMMUNICATION SCIENCES AND DISORDERS (1-4) Addressing the central research and clinical issues related to the diagnosis and treatment of communication disorders. (PR: CI)

CRIMINOLOGY

Chairperson: W.R. Blount; *Professors:* W.R. Blount, R. Dembo, I. Silverman, M. Silverman, L. Territo; *Associate Professors:* J. Halsted, K.M. Heide, T. Mieczkowski, J.T. Reilly, R.M. Stanford, M. Vega; *Assistant Professors:* C. Greek, C. Sellers, L. Smith; *Academic Administrator:* M. Johnson.

CCJ 6205 THE JUDICIAL PROCESS (3) Designed to equip the student with an understanding of the evolution and current features that characterize the structure and operations of county, state, and federal courts. (PR: CCJ 6285 or CI)

CCJ 6285 LAW AND CRIMINAL JUSTICE (3) An exposition of historical and contemporary legal principles, procedures, and issues as reflected in Constitutional provision, statutes, and case law.

CCJ 6305 THEORY, PRACTICE, AND RESEARCH IN CORRECTIONS (3) Examination of the interrelationships between theory and practice in corrections, as these are affected by empirical research and systematic program evaluation.

CCJ 6345 SUPERVISION AND TREATMENT STRATEGIES (3) Designed to acquaint the beginning graduate student with general conditions, skills, and techniques required to provide effective correctional treatment or intervention with adult and juvenile offenders.

CCJ 6405 LAW ENFORCEMENT ADMINISTRATION (3) Examination of the major elements of law enforcement administration and management. Special attention is given to the organization theory and scientific management of law enforcement agencies.

CCJ 6406 THEORY, PRACTICE, AND RESEARCH IN LAW ENFORCEMENT (3) This issue-oriented course explores the relationships among theory, practice, and research as these are reflected in the problems and challenges that confront law enforcement.

CCJ 6455 CORRECTIONAL ORGANIZATION AND ADMINISTRATION (3) A comprehensive overview of the state of the art of correctional organization and administration. This course blends together the most current information from the managerial and behavioral sciences.

CCJ 6469 HUMAN RESOURCE MANAGEMENT IN LAW ENFORCEMENT (3) This course is designed to develop a broad exposure to new approaches, techniques, and future trends in law enforcement human resource management. Some topics included will be: functions of the police personnel unit; psychological screening of police applicants; and court-mandated recruitment and employment.

CCJ 6605 THEORETICAL APPROACHES TO CRIMINAL BEHAVIOR (3) An introduction to, and comparison of, major historical and contemporary theories that seek to explain criminal behavior.

CCJ 6705 SYSTEMATIC INQUIRY IN CRIMINAL JUSTICE (3) Introduces the basic concepts, terminology, techniques, approaches, and issues in Criminal Justice research, with emphasis on the relationships among theory and research, legal bibliography, and the ethical issues involved in systematic inquiry.

CCJ 6707 RESEARCH AND EVALUATION IN CRIMINAL JUSTICE (4) Introduction to empirical research techniques and principles, statistics, data management, and management information procedures. (PR: CCJ 6705)

CCJ 6725 CORRECTIONAL PLANNING (3) Provides an in-depth examination of urban correctional planning processes, with emphasis on personnel development, budgeting, and facility plans and their implementation.

CCJ 6910 DIRECTED RESEARCH Var. Rpt. to a maximum of 3 hours toward the M.A. degree. S/U. (PR: CI)

CCJ 6920 PRO SEMINAR IN CRIMINAL JUSTICE (1) Provides a forum for presentation and discussion of research ideas by faculty, students, and guests, with a view toward the development of thesis topics. One hour is required for all students and should be taken during the first semester.

CCJ 6935 TOPICS IN CRIMINAL JUSTICE (3) Analysis and discussion of topics of major concern in criminal justice that are not covered in regular courses. Rpt. with different subject matter. (PR: GS in the Department)

CCJ 6936 CURRENT ISSUES IN LAW ENFORCEMENT (3) This course will focus on some of the most significant issues facing law enforcement agencies today. Some topics included will be: police use of deadly force; review of police conduct; police unionization; police corruption; media relations; civil liability; and community/problem-oriented policing.

CCJ 6971 THESIS: MASTER'S Var. Rpt. to 6 hours toward the M.A. (PR: CCJ 6707)

CCJ 6974 AREA PROJECT Var. Rpt. Required of students not using the thesis option. Maximum of 3 hours toward the Master's degree. S/U. Rpt. to 12. (PR: GS in the Department and CI)

ENGLISH

Chairperson: W.T. Ross; *Professors:* J.P.W. Rogers (DeBartolo Chair in the Liberal Arts), L.R. Broer, J.R. Clark, S.M. Deats, H.A. Deer, I. Deer, R.F. Dietrich, F.J. Fabry, S.R. Fiore, W. Garrett, J.S. Hatcher, E.F. Henley, J.P. Hinz, J.J. Iorio, D.L. Kaufmann, J.B. Moore, W.E. Morris, G.A. Olson, R.S. Pawlowski, W.D. Reader, W.T. Ross, S.J. Rubin, W.H. Scheuerle, E.E. Smith, D.A. Wells; *Associate Professors:* R.M. Baum, A.G. Bryant, R.E. Chisnell, R.M. Figg III, R.E. Hall, M.C. Harmon, W.J. Heim, R.L. Hewitt, J.W. Holman, E.A. Metzger, J.M. Moxley, P.J. Sipicra, N.J. Tyson, R.D. Wyly, Jr.; *Assistant Professors:* P.J. Collins, E.A. Hirsh, F.T. Mason, F.J. Zbar.

AML 6017 STUDIES IN AMERICAN LITERATURE TO 1860 (3) Selected focused studies in American literature before 1860: the Puritans, Franklin, Cooper, Irving, Poe, Emerson, Hawthorne, Melville, and others. Rpt. 3 times with different subject matter.

AML 6018 STUDIES IN AMERICAN LITERATURE – 1860 TO 1920 (3) Selected focused studies in American literature: Dickinson, Whitman, Twain, Howells, James, Jewett, Chopin, Crane, Dreiser, and others. Rpt. 3 times with different subject matter.

AML 6027 STUDIES IN MODERN AMERICAN LITERATURE (3) Modern American drama, poetry, fiction, and literary criticism; authors include Faulkner, Hemingway, Fitzgerald, O'Neill, Anderson, Wolfe, Cummings, Frost, Pound, and Eliot. Rpt. 3 times with different subject matter.

ENC 6319 SCHOLARLY WRITING FOR PUBLICATION IN ENGLISH STUDIES (3) Methods of writing and publishing scholarly articles, monographs, and textbooks in rhetoric and composition, literary scholarship, and criticism.

ENC 6336 RHETORICAL DIMENSIONS OF COMPOSITION (3) Examines the evolving relationship between rhetoric and composition from antiquity to the present.

ENC 6700 STUDIES IN COMPOSITION THEORY (3) Major theories and models of composing. Selected theorists include Rohman, Emig, Sommers, Flowers, and Hayes. Rpt. 3 times with different subject matter.

ENC 6720 STUDIES IN COMPOSITION RESEARCH (3) Examines and evaluates a broad range of important research studies conducted in composition and a variety of research techniques such as descriptive statistics, qualitative research design, and measurement and evaluation. Instruction in how to conduct composition research. Rpt. 3 times with different subject matter.

ENC 6740 THEORY AND DEVELOPMENT OF WRITING PROGRAMS (3) Operating theories of and administrative procedures for implementing writing programs on various levels; focuses on remedial, freshman, advanced, and technical writing programs as well as writing centers.

- ENG 6009 BIBLIOGRAPHY FOR ENGLISH STUDIES (3)** Detailed study of bibliographies of cultural milieus, genres, periods, and authors. Consideration of the profession's standards and procedures for publishing scholarly research. In addition to library research, the student will also submit one scholarly article of publishable quality.
- ENG 6017 STUDIES IN STYLE (3)** Poetics, rhetoric, dramatic style, prose style, short fiction, the novel, and the essay. Rpt. 3 times with different subject matter.
- ENG 6018 SCHOLARSHIP AND CRITICISM (3)** Selected focused study of research approaches to English. Rpt. 2 times with different subject matter.
- ENG 6916 DIRECTED RESEARCH** Var. Rpt. S/U. (PR: GR. ML)
- ENG 6939 GRADUATE SEMINAR IN ENGLISH (3)** Rpt. 3 times with different subject matter. (PR: Consent of graduate adviser)
- ENG 6971 THESIS: MASTER'S** Var. Rpt.
- ENG 7916 DIRECTED RESEARCH** Var. Rpt. S/U. (PR: GR. Ph.D. level)
- ENG 7939 DOCTORAL SEMINAR (3)** Intensive small-group discussion as well as shared and individual guided research in a student's area of doctoral specialty. Rpt. to 9 hours. (PR: Admission to Ph.D. Program)
- ENG 7980 DISSERTATION: DOCTORAL** Var. Rpt. (PR: Admission to Candidacy)
- ENL 6206 STUDIES IN OLD ENGLISH (3)** A study of Old English language, prose style, poetry. Rpt. 3 times with different subject matter.
- ENL 6216 STUDIES IN MIDDLE ENGLISH (3)** Selected focused studies in language and in various authors and writings, 1100-1500; Chaucer, the Pearl poet, Everyman, ballads, drama. Rpt. 3 times with different subject matter.
- ENL 6227 STUDIES IN SIXTEENTH-CENTURY BRITISH LITERATURE (3)** Selected focused studies in sixteenth-century British literature; Shakespeare, Sidney, Spenser, Marlowe, and others. Rpt. 3 times with different subject matter.
- ENL 6228 STUDIES IN SEVENTEENTH-CENTURY BRITISH LITERATURE (3)** Selected focused studies in British literature, 1600-1660; Bacon, Donne, Jonson, Herbert, Milton, and others. Rpt. 3 times with different subject matter.
- ENL 6236 STUDIES IN RESTORATION AND EIGHTEENTH-CENTURY BRITISH LITERATURE (3)** Selected focused studies in Restoration and Eighteenth-Century British literature: Dryden, Defoe, Pope, Swift, Fielding, Sheridan, Johnson, Boswell, and others. Rpt. 3 times with different subject matter.
- ENL 6246 STUDIES OF THE ENGLISH ROMANTIC PERIOD (3)** A study of pre-Romantic and Romantic prose, fiction, nonfiction, and poetry. Rpt. 3 times with different subject matter.
- ENL 6256 STUDIES IN VICTORIAN LITERATURE (3)** A study of Victorian poetry, fiction, non-fictional prose, and drama. Rpt. 3 times with different subject matter.
- ENL 6276 STUDIES IN MODERN BRITISH LITERATURE (3)** A study of Irish and English drama, the modern novel, poetry, criticism, and the short story. Rpt. 3 times with different subject matter.
- LAE 6375 PROBLEMS IN COLLEGE ENGLISH INSTRUCTION: COMPOSITION (3)** An examination of the objectives of freshman English and an investigation of current techniques for achieving those objectives, emphasizing the problems of developing critical reading skills and the techniques of expository writing at the college level.

- LAE 6389 PROBLEMS IN COLLEGE ENGLISH INSTRUCTION: LITERATURE (3)** A course that allows the prospective college English teacher to experiment with teaching techniques that will determine the most effective ways to teach literature and teach college English teachers the variety and importance of literary techniques and their relevance to various subject matters.
- LAE 6392 PRACTICE IN TEACHING COMPOSITION (3)** In semester I required of and open only to Teaching Assistants new to U.S.F.'s Freshman English program. Gives practical guidance in preparing to teach composition. S/U.
- LAE 7376 PROBLEMS IN ADVANCED ENGLISH INSTRUCTION OF COMPOSITION (3)** Apprenticed, closely supervised study of and practice in teaching of college and university advanced composition. Student may elect to work with nonfiction, fiction, or poetry. (PR: Admission to the Ph.D. program in English)
- LAE 7390 PROBLEMS IN ADVANCED ENGLISH INSTRUCTION AND SCHOLARLY RESEARCH (3)** This course provides closely supervised training in upper-level college English instruction and experience with professional research. Experience in lecture, seminar discussion, examinations, evaluation, conferences, directing undergraduate research, course development, use of secondary materials, publication procedure, and collation. (PR: Ph.D. Candidacy)
- LIN 5107 HISTORY OF THE ENGLISH LANGUAGE (3)** The course will trace the history of the English language from its beginnings in continental Europe, through the Anglo-Saxon and Middle English periods, the Renaissance, and the Nineteenth Century, to the present day with emphasis on both the structural development of the language and the political, social, and intellectual forces that determined this development. (PR: Senior or GS)
- LIN 5741 LANGUAGE TESTING (3)** Methodology of testing English as a Second/Foreign language. (PR: TSL 5371)
- LIT 6096 STUDIES IN CONTEMPORARY LITERATURE (3)** Drama, poetry, fiction, and literary criticism; authors to be studied include Ionesco, Thomas, Miller, T. Williams, Beckett, Camus, Burgess, Morrison, and Walker. Rpt. 3 times with different subject matter.
- LIT 6105 STUDIES IN CONTINENTAL LITERATURE (3)** General areas include the Renaissance, the Enlightenment, the Novel in Europe, the Romantic Movement on the Continent, and Classical Comedy. Rpt. 3 times with different subject matter.
- LIT 6934 SELECTED TOPICS IN ENGLISH STUDIES (1-6)** Current topics offered on a rotating basis include The Nature of Tragedy; The Nature of Comedy and Satire; and The Nature of Myth, Allegory, and Symbolism. Other topics will be added in accordance with student demand and instructor interest.

MODERN LANGUAGES AND LINGUISTICS

Director: R.W. Cole; *Professors:* G. Brulotte, C.W. Capsas, C.J. Cargill, R.W. Cole, D. Ierardo, E.J. Neugaard, R.C. O'Hara, V.E. Peppard, R.A. Preto-Rodas, C.E. Scruggs; R.A. Stelzmann; *Associate Professors:* J.C. Caflich, Sr., C.J. Cano, R.A. Cherry, Jr., M. Esformes, W.H. Grothmann, W.R. Hampton, C.M. Probes, J.C. Tatum; *Lecturers:* J.A. Feliciano-Butler, R.E. Horn, I.A. Nemchonok; *Courtesy Faculty:* Y.R. Cadiz, A.G. Grognet; *Other Faculty:* S.B. Bode.

General

See also offerings under French, German, Italian, Linguistics, and Spanish

FOL 5906 DIRECTED STUDY (1-3) (PR: FOL 4200 or equiv.)

FOW 6805 BIBLIOGRAPHY (1) Research methods. Includes familiarity with major journals and bibliographies, with a practicum. S/U.

French

FLE 6829 GRADUATE INSTRUCTION METHODS (1-4) Special course to be used primarily for the training of graduate teaching assistants. Var. Rpt. to a total of 4 hours. (S/U only)

FRE 5425 ADVANCED WRITTEN EXPRESSION (3) Course is designed to give advanced training in free composition in French. (PR: FRE 4421, or equiv.)

- FRE 5566 CONTEMPORARY FRANCE (3)** An advanced course in French civilization and culture including a study of recent social, economic and political trends. Text and discussions in French. (PR: FRE 3500 or equiv. or GS)
- FRE 6910 DIRECTED RESEARCH** Var. Rpt. S/U. (PR: GR, ML)
- FRE 6971 THESIS: MASTER'S** Var. Rpt.
- FRW 5222 CLASSICAL PROSE AND POETRY (3)** Emphasis on Malherbe, Descartes, Pascal, LaFontaine, and Boileau. (PR: FRW 4101)
- FRW 5226 20TH CENTURY POETRY AND THEATRE (3)** Valery, Claudel, Anouilh, Montherland, Sartre, Ionesco. (PR: FRW 4101)
- FRW 5286 THE 20TH CENTURY NOVEL (3)** Proust, Gide, Mauriac, Malraux, Camus, Robbe-Grillet. (PR: FRW 4100)
- FRW 5310 CLASSICAL DRAMA (3)** Corneille, Moliere, and Racine. (PR: FRW 4101)
- FRW 5415 LITERATURE OF THE MIDDLE AGES (3)** Major genres, including epics, Arthurian romances, drama, and lyric poetry. Reading in modern French translation. (PR: FRW 4100 or 4101)
- FRW 5425 LITERATURE OF THE RENAISSANCE (3)** A study of Renaissance French humanism including Rabelais, Montaigne, and Pleiade poets. (PR: FRW 4100 or 4101)
- FRW 5445 18TH CENTURY LITERATURE (3)** The classical tradition and the new currents of thought in the Age of Enlightenment. (PR: FRW 4100)
- FRW 5530 PRE-ROMANTICISM (3)** The precursors of romanticism. Emphasis on Rousseau, Bernardin de St. Pierre, Chenier, and Chateaubriand. (PR: FRW 4100 or 4101)
- FRW 5535 ROMANTICISM AND EARLY REALISM (3)** A study of the romantic and early realistic movements with emphasis on Lamartine, Vigny, Musset, Hugo, and Balzac. (PR: FRW 4101)
- FRW 5556 NATURALISM AND REALISM (3)** A detailed study of realism and naturalism with emphasis on Flaubert, Zola, les Goncourt, Maupassant, and Daudet. (PR: FRW 4100 or 4101)
- FRW 5934 SELECTED TOPICS (1-3)** Study of an author, movement, or theme. (PR: Upper-level or GS)
- FRW 6315 SEMINAR ON CLASSICAL DRAMA (3)** An in depth study of the works of one or more of the following dramatists: Corneille, Racine, or Moliere.
- FRW 6405 OLD FRENCH (3)** An introduction to the Old French language and literature. Readings from representative texts.
- FRW 6416 MEDIEVAL LITERATURE (3)** A study in depth of Old French literature of the Middle Ages.
- FRW 6938 GRADUATE SEMINAR (3)** Topics vary. Rpt.

German

- GER 5845 HISTORY OF THE GERMAN LANGUAGE (3)** A diachronic approach to the study of the German language. The course traces the history and development of the language from Indo-European through Germanic, Old, Middle, and New High German.
- GER 6060 GERMAN FOR READING (3)** Designed to provide a reading ability in German that will support research in other disciplines.
- GER 6908 INDEPENDENT STUDY** Var. Independent study in which student must have a contract with an instructor. Rpt. S/U.

- GEW 5475 20TH CENTURY LITERATURE TO 1945 (3)** A study of major styles in German literature from 1900 to WWII with emphasis on Hauptmann, Schnitzler, Hofmannsthal, George Rilke, Kaiser, Heym, Trakl, Thomas Mann, Hesse, Kafka, Benn, Brecht.
- GEW 5489 20TH CENTURY LITERATURE 1945 TO PRESENT (3)** Study of major trends in German literature since WWII with emphasis on Borchert, Frisch, Durrenmatt, Boll, Uwe, Johnson, Grass, Aichinger, Eich Enzensberger, Bachmann.
- GEW 5515 THE ENLIGHTENMENT (3)** Selected dramas and critical writings by Lessing, Wieland, Kant.
- GEW 5545 ROMANTICISM (3)** Jenaer circle and Heidelberger circle; the late romantic period, the writers between Classicism and Romanticism.
- GEW 5555 REALISM (3)** Selected works by Grillparzer, Grabbe, Buchner, Hebbel, Heine, Immerman, Stifter, Keller, Meyer, Storm, Raabe, Hulshoff, and Morike.
- GEW 5600 GOETHE (3)** Selected novels, poems: Werther, Wahlverwandschaften, Wilhelm Meister, Westostlicher, Divan.
- GEW 5603 FAUST (3)** Sources, form, content, and literary significance of Urfaust and Faust.
- GEW 5610 SCHILLER (3)** Selected dramas, philosophical, and aesthetical writings.
- GEW 5934 SELECTED TOPICS (1-3)** Study of an author, movement, or theme. (PR: Upper-level or GS)
- GEW 6915 DIRECTED RESEARCH** Var. Rpt. S/U. (PR: GR. ML)

Italian

- ITW 6910 DIRECTED RESEARCH** Var. Rpt. S/U. (PR: GR. ML)

Linguistics

- LIN 5700 APPLIED LINGUISTICS (3)** Analysis of the phonological, morphological, and syntactic features of English as a basis for linguistic application to problems of English language acquisition by non-native speakers.
- LIN 6081 INTRODUCTION TO GRADUATE STUDY IN LINGUISTICS (3)** Required of all M.A. candidates. An introduction to the aims and methodologies of linguistics as a graduate discipline: The field of linguistics, its subdisciplines, and its relationship to adjacent arts and sciences; bibliographical resources; methods of research and research writing; and a brief survey of the historical development of linguistics and current issues in the field.
- LIN 6117 HISTORY OF LINGUISTIC THOUGHT (3)** Survey of the development of language study in the West from Antiquity to the present. Classical and medieval theories of language; origins of traditional grammar; rationalist linguistic theory and philosophical grammar, and an examination of the origin of contemporary linguistic controversies.
- LIN 6128 HISTORICAL LINGUISTICS (3)** An advanced survey of the principles and methodology of historical linguistics.
- LIN 6129 STUDIES IN ENGLISH LANGUAGE AND LINGUISTICS (3)** An advanced study of the origin, historical development and contemporary structure of British and American English in its social and cultural milieu, with emphasis upon modern techniques for linguistic analysis and description.
- LIN 6139 TOPICS IN THEORETICAL LINGUISTICS (3)** Offerings will include current issues in any area of linguistic theory.
- LIN 6322 PHONOLOGICAL DESCRIPTION (3)** Analysis of the phonological component of a grammar, its role and formal structures. The generative model is compared to taxonomic descriptions. Theory and data-solution problems. (PR: Syntax, or CI)

- LIN 6351 THE SOUND SYSTEM OF ENGLISH (3)** Training in applied phonetic transcription of American English speech; analysis and description of major phonological processes and dialect features of American English, with practice in teaching pronunciation. (PR: LIN 5700 or EQ)
- LIN 6377 THE STRUCTURE OF A SPECIFIC LANGUAGE (3)** Analysis of the linguistic structures of both common and uncommon languages. Rpt. to 6 hours with change in content/title.
- LIN 6380 SYNTACTIC DESCRIPTION (3)** Analysis of syntactic descriptions of various languages through data-solution problems in co-occurrence relations, agreement, permutation, conjoining, and embedding. Feature grammars and other models are discussed. GB and EC models included.
- LIN 6601 SOCIOLINGUISTICS (3)** Detailed analysis of the phenomenon of language variation with emphasis upon the research methodology of sociolinguistics and the implications of its findings for current linguistic theory.
- LIN 6675 THE GRAMMATICAL STRUCTURE OF AMERICAN ENGLISH (3)** Analysis and description of major morphological and syntactic structures of American English, with emphasis upon applied linguistics. (PR: LIN 5700 or EQ)
- LIN 6715 LANGUAGE ACQUISITION (3)** A survey of current research and theory in the processes of normal language acquisition and development. (PR: LIN 3010, LIN 4377 or CI)
- LIN 6720 SECOND LANGUAGE ACQUISITION (3)** Neurolinguistic, psycholinguistic, and sociolinguistic bases of second language acquisition by both children and adults. (PR: LIN 6715 or EQ)
- LIN 6748 CONTRASTIVE ANALYSIS (3)** Comparison and contrast of the structures of American English with corresponding structures in selected foreign languages. EA and IA added for contrast with CA.
- LIN 6752 FORMAL STYLISTICS (3)** Introduction to kinesics and paralinguistics; the linguistic structure of gesture, proxemics, and other significant areas of nonverbal communication and signaling behavior. (PR: CI)
- LIN 6850 STUDIES IN SEMANTICS (3)** Selected problems in the area of meaning and the relationship between linguistic structure and cognition. Mappings of presupposition, kinship fields, emotive concepts, and other problems are surveyed. Theories of Fodor-Katz, Chomsky, Ross-Lakeoff-McCawley, and others are contrasted. (PR: Syntax)
- LIN 6908 INDEPENDENT STUDY** Var. Independent study in which the student must have a contract with an instructor. Rpt. S/U.
- LIN 6910 DIRECTED RESEARCH** Var. Rpt. S/U. (PR: GR, ML)
- LIN 6932 SELECTED TOPICS (1-4)** Content will depend upon instructor's interests and students' needs. Such topics and neurolinguistics, bilingualism, and discourse analysis may be taught.
- LIN 6940 GRADUATE INSTRUCTION METHODS (1-4)** Special course to be used primarily for the training of teaching assistants. Var. Rpt. to a total of 4 credits. (S/U only.)
- LIN 6971 THESIS: MASTER'S** Var. Rpt.
- TSL 5321 ESOL STRATEGIES FOR CONTENT AREA TEACHERS (3)** Course designed for public school teachers working with limited English Proficient (foreign) students in the classroom. The new ESOL requirements specify that this course be offered to content area teachers and to ESOL teachers. May not be repeated.
- TSL 5371 METHODS OF TEACHING ENGLISH AS A SECOND LANGUAGE (3)** Analysis of the methods of teaching English pronunciation and structure to speakers of other languages.

Arts and Sciences

- TSL 5372 ESOL CURRICULUM AND INSTRUCTION** (3) Analysis of the methods of teaching English pronunciation and structure to speakers of other languages.
- TSL 5471 LANGUAGE TESTING** (3) Lecture course on testing English as a second/foreign language. (PR: TSL 5371)
- TSL 5525 CROSS CULTURAL ISSUES IN ESL** (3) Lecture course on cultural issues in Teaching English as a Second/Foreign language. (PR: LIN 5700)
- TSL 6945 INTERNSHIP** (1-6) Required of all candidates for the M.A. degree in TESL. Supervised teaching of English as a second language to non-native speakers at appropriate levels and settings. Rpt. up to 6 hours. S/U. (PR: TSL 6371 and TSL 6372)

Spanish

- SPN 5525 MODERN SPANISH AMERICAN CIVILIZATION** (3) Advanced readings and discussions dealing with Spanish American civilization and culture, including a study of social, artistic and political trends. Text and discussion in Spanish. (PR: SPN 3520)
- SPN 5567 MODERN SPANISH CIVILIZATION** (3) Advanced readings and discussions dealing with contemporary Spanish civilization and culture, including a study of recent social, artistic, and political trends. Texts and discussions in Spanish. (PR: SPN 3500 or equiv. GS standing)
- SPN 6455 STYLISTICS** (3) Study of major models of style in different genres. Majors only. (PR: SPN 4301 or equiv)
- SPN 6795 PHONOLOGY AND DIALECTOLOGY** (3) A study of the Spanish sound system. (PR: SPN 3300)
- SPN 6845 HISTORY OF THE SPANISH LANGUAGE** (3) Traces the development of Spanish from its Latin origins to the present.
- SPN 6940 GRADUATE INSTRUCTION METHODS** (1-3) Special course to be used primarily for the training of teaching assistants. Var. Rpt. to a total of 3 credits. S/U.
- SPW 5135 COLONIAL SPANISH AMERICAN LITERATURE** (3) Introduction to Colonial Spanish American Literature from the discovery through the Romantic Period. (PR: SPW 4131)
- SPW 5355 SPANISH AMERICAN DRAMA AND POETRY** (3) Major writers of all genres. Emphasis on modern writers. (PR: SPW 4131)
- SPW 5387 SPANISH AMERICAN PROSE** (3) Emphasis on the gaucho theme and contemporary prose fiction. (PR: SPW 4131)
- SPW 5388 GOLDEN AGE POETRY AND DRAMA** (3) Lope de Vega, Alarcon, Tirso, Calderon, and others. (PR: SPW 4100)
- SPW 5405 MEDIEVAL LITERATURE** (3) Course gives an in depth study of principal works and authors of the period such as El Poema de Mio Cid, Libro de Buen Amor, and La Celestina. (PR: SPW 4100 or equiv.)
- SPW 5465 19th CENTURY LITERATURE** (3) Appreciation of the romantic and realist periods in Spanish literature. (PR: SPW 4101)
- SPW 5605 CERVANTES** (3) Cervantes' masterpiece Don Quijote de la Mancha.
- SPW 5725 GENERATION OF 1898** (3) The major figures of the period and their main followers. (PR: SPW 4101)
- SPW 5726 VANGUARD LITERATURE 1918 AND 1936** (3) A study of Vanguard literature in Spain between 1918 and 1936. (PR: SPW 4101)
- SPW 5934 SELECTED TOPICS** (3) Study of an author, movement, or theme. (PR: Upper-level or GS)

- SPW 6428 GOLDEN AGE NOVEL** (3) Realistic prose-fiction of the Renaissance and Golden Age.
- SPW 6485 POST CIVIL WAR LITERATURE** (3) The drama and novel since 1936. (PR: SPW 4101)
- SPW 6775 CARIBBEAN LITERATURE** (3) Emphasis on contemporary Cuban and Puerto Rican literature. (PR: SPW 4131)
- SPW 6910 DIRECTED RESEARCH** Var. Rpt. S/U. (PR: GR. ML)
- SPW 6936 GRADUATE SEMINAR** (3) Topics vary. Rpt.
- SPW 6971 THESIS: MASTER'S** Var. Rpt.

GEOGRAPHY

Chairperson: R.T. Aangeenbrug; *Professor Emeritus:* R.H. Fuson, H.H. Neuberger, *Professors:* R.T. Aangeenbrug, D.M. Stowers; *Associate Professors:* J.W. Stafford, H.J. Schaleman; *Assistant Professors:* K.W. Archer, R. Brinkmann, J.E. Garcia, M.B. Lindberg.

- GEO 6195 SEMINAR IN ADVANCED REGIONAL GEOGRAPHY** (3) Analytic study of a selected region of the world. Rpt. once for credit, but region may not be repeated. (PR: GS in Geography)
- GEO 5058 GEOGRAPHIC LITERATURE AND HISTORY** (3) The origins and development of the discipline as revealed through an examination of the principal written sources. Special attention paid to leading personalities and modern periodicals. (PR: Senior or GS in Geography, or CI)
- GEO 6119 SEMINAR IN ADVANCED TECHNIQUES AND METHODOLOGY** (3) Analytic study of a technique or investigation into an aspect of methodology. Rpt. once for credit, but topic may not be repeated. (PR: GS in Geography)
- GEO 6209C SEMINAR IN ADVANCED PHYSICAL GEOGRAPHY** (3) Analytic study of one or more topics from physical geography. Selected problems may include hydrology, physiography, meteorology, climatology, soils, or vegetation, etc. May be repeated once. (PR: GS in Geography or CI)
- GEO 6428 SEMINAR IN ADVANCED CULTURAL GEOGRAPHY** (3) Analytic study of a problem selected from aspects of the cultural landscape (urban, political, economic, population, settlement). Rpt. once. (PR: GS in Geography)
- GEO 6908 INDEPENDENT STUDY** Var. Independent study in which students must have a contract with an instructor. S/U.
- GEO 6918 DIRECTED RESEARCH** Var. Rpt. S/U. (PR: GR. ML)
- GEO 6944 INTERNSHIP IN GEOGRAPHY** (3) The internship in Geography is designed to provide students the opportunity to work in an appropriate governmental agency to gain practical field experience. S/U. (PR: GS in Geography)
- GEO 6945 ACADEMIC METHODOLOGY** (3) Current trends in college Geography, with the emphasis on the Junior College program. Not available to thesis students. (PR: GS in Geography)
- GEO 6947 DIRECTED TEACHING** Var.
- GEO 6971 THESIS: MASTER'S** Var. Rpt.

GEOLOGY

Chairperson: M.T. Stewart; *Distinguished Research Professor:* R.A. Davis, Jr.; *Professors:* M.T. Stewart, S.B. Upchurch, H.L. Vacher; *Associate Professor:* M.J. Defant; *Assistant Professors:* W.D. Allmon, T.M. Quinn, L.L. Robbins, J.G. Ryan, E.A. Snow.

- GLY 5246 GENERAL GEOCHEMISTRY** (3) Age, formation and evolution of the earth with application of basic chemical concepts and processes that govern the distribution of elements in geologic environments. (PR: One year college Chemistry, GLY 3200 or CI)

- GLY 5285 ANALYTICAL TECHNIQUES IN GEOLOGY (4)** Use and application of analytical methods including X-ray, atomic absorption, ICP/MS, TEM, SEM, and other geochemical techniques. Interpretation and statistical analysis of the data acquired. Lec/Lab. (PR: One year college Chemistry, GLY 4200 or CI)
- GLY 5315 IGNEOUS AND METAMORPHIC PETROLOGY (4)** Systematic study of igneous and metamorphic rocks and complexes, including origin, composition, and classification. Use of the polarizing microscope for thin section analysis is emphasized, and other methods of study are also employed. Lec/Lab. (PR: GLY 4200)
- GLY 5475 PRINCIPLES OF APPLIED GEOPHYSICS (4)** Elementary treatment of gravimetric, magnetic, electric, and seismic geophysical techniques as applied to resource exploration, site investigation, and mineral deposits. Lec/Lab. Field trips. (PR: Senior standing, one year of Physics or CI)
- GLY 5752 GEOLOGICAL FIELD EXCURSION (2)** Lectures and 2-3 week field excursion to study regional geology, structure and lithogenesis of geologically complex terrain. Mapping and outcrop description techniques are emphasized. Destination of trip varies. Trip requires camping and vigorous physical activity. Lec. Field trip. (PR: GLY 3400, GLY 4550, and GLY 4750)
- GLY 5827 ADVANCED HYDROGEOLOGY (4)** Flow systems, analytical and numerical solutions to ground-water flow problems. Emphasis on the theoretical aspects of ground-water flow systems and their interaction with the geologic framework. Lec/Lab. Field trips. (PR: GLY 4822, one year college calculus or CI)
- GLY 5865 STATISTICAL MODELS IN GEOLOGY (3)** Application of statistical methods to geological problems. Emphasis on sampling plans, nature of geologic distributions, and application of analyses of variance to solving geological problems. Lec. (PR: STA 3023 or equiv. or CI)
- GLY 5932 SELECTED TOPICS IN GEOLOGY (1-4)** Each topic is a course in directed study under supervision of a faculty member. All areas of geology included. Departmental permission required prior to registration. (PR: Senior standing and CC)
- GLY 6156 GEOLOGY OF NORTH AMERICA (2)** Regional structure, stratigraphy, and history of North America. (PR: GS or CI)
- GLY 6248 SEDIMENTARY GEOCHEMISTRY (3)** The geochemistry of fluid-rock interaction with emphasis on the diagenesis of sedimentary material. (PR: GLY 5246 or CI)
- GLY 6345 SEDIMENTARY PETROGRAPHY (4)** Classification, petrographic description and interpretation of sedimentary rocks including depositional environments and diagenesis. Lec/Lab.
- GLY 6424 GLOBAL TECTONICS (2)** Development of the global tectonic hypothesis, global tectonic theory, and application of the theory in selected regions of the earth. (PR: GS or CI)
- GLY 6526 BIOSTRATIGRAPHY (3)** Theory and practice of biostratigraphy of major microfossil groups. Emphasis on selected techniques of correlation. Detailed consideration of stratigraphic zonation, problems and limitations. Readings of current literature. (PR: OCG 6656 or equiv. or CI)
- GLY 6553 FACIES MODELS (3)** Characterization of facies models for stratigraphic sequences representing terrestrial, transitional and marine sedimentary environments. Emphasis on textures, structures and composition of strata and their environmental interpretation in the rock record. (PR: GLY 4550 or equiv.)
- GLY 6575C COASTAL SEDIMENTATION (3)** Study of modern coastal sedimentary environments with emphasis on beaches, inlets, deltas, estuaries, and marshes. Analysis of sedimentary process and resulting morphology of sediment bodies. Lec/Lab. Field trips. (PR: GLY 4555 or equiv.)

GLY 6655 PALEOBIOLOGY (3) Theory and practice of modern paleobiology including, consideration of diversity and extinction patterns, documentation and causes of trends, patterns, and causes of speciation, functional analysis and adaptation, tempo and mode in evolution, and the ecological context of evolutionary change. (PR: GLY 3610 equiv., PCB 4674 or equiv. or CI)

GLY 6659 MOLECULAR PALEONTOLOGY (3) Theory and practice of using molecules in paleontology, including historical development of the field, application of taxonomic determination, phylogenetic reconstruction, role of organic molecules in biomineralization, and amino acid racemization dating. (PR: Background in both Micro and Macro-paleontology and CI)

GLY 6739 SELECTED TOPICS IN GEOLOGY (1-4) Rpt. (PR: CI)

GLY 6828 GROUND-WATER GEOCHEMISTRY (3) Chemical behavior of ground water. Includes interaction of water with aquifer materials, salt-water intrusion, chemical impacts of waste disposal, use of chemical tracers, and transport of hazardous chemicals. Methods of sampling and data interpretation are emphasized. Lec. (PR: One year of college Chemistry, GLY 4822, GLY 5246, or CI)

GLY 6905 INDEPENDENT STUDY Var. Independent study in which student must have a contract with an instructor. Rpt. S/U.

GLY 6910 DIRECTED RESEARCH Var. Rpt. S/U. (PR: GR, ML)

GLY 6931 GRADUATE SEMINAR (1) Rpt. S/U. (PR: CC)

GLY 6933 ADVANCED TOPICS IN GEOLOGY (2) Current topics in Geology. Rpt. (PR: GS)

GLY 6971 THESIS: MASTER'S Var. Rpt.

OCG 6656C MARINE MICROPALAEONTOLOGY (4) Introduction to the microscopic marine fauna and flora, found in the fossil sedimentary record. Emphasis is placed on the ecology, paleoecology, paleontology, and biostratigraphic record of calcareous and siliceous microfossils. (PR: B.S. in Geology or Biology, OCG 5050, or CI)

OCG 6660 MARINE PALEOECOLOGY (3) Interpretation of the relationships between ancient organisms and their environment with emphasis on the substrate. Applications of modern benthic marine environments and sediment-organism relationships to fossil record. (PR: Background in sedimentology, paleontology or marine ecology, or CI)

GERONTOLOGY

Chairperson: L.C. Mullins; *Professors:* L.C. Mullins, T.A. Rich, S.V. Saxon, H.L. Sheppard; *Associate Professors:* J.L. Garcia, W.P. Mangum; *Other Faculty:* L. Dupree, M.J. Etten, J. Freeman, D. Gammonly, H. Susik.

GEY 5620 SOCIOLOGICAL ASPECTS OF AGING (3) Examines, within a sociological frame of reference, the interrelationships between the aged (or aging) and the structure and function of the social system and its major institutionalized subsystems.

GEY 5630 ECONOMICS AND AGING (3) Examines basic economic systems as they impact the aged. Emphasis is on applied aspects of economic planning, pensions, insurance, social security and other support systems.

GEY 5642 PERSPECTIVES ON DEATH AND DYING (3) Study of the various psychological, medical, legal, and religious problems caused by dying and death, and how individuals and groups have responded in the past and present.

GEY 6325 SOCIAL POLICY AND PLANNING FOR GERONTOLOGISTS I (3) This course is designed to provide an empirical and analytical base for understanding the major issues and trends involved in existing and proposed programs and services in the field of aging at local, state, and federal levels.

GEY 6326 SOCIAL POLICY AND PLANNING FOR GERONTOLOGISTS II (3) This course builds upon the historical and background content provided in Social Policy and Planning for Gerontologists I and provides the student with a specific focus on policy analysis and development. (PR: GEY 6325)

- GEY 6450 GERONTOLOGICAL RESEARCH AND PLANNING (3)** Social research and planning methods in the field of gerontology. Directed to the consumers of research findings-person whose positions call for the ability to interpret, evaluate, and apply the findings produced by others.
- GEY 6455 GERONTOLOGICAL RESEARCH AND PLANNING II (3)** A continuation of GEY 6450. Centers on quantitative methodology as it applies to the field of gerontology. Aimed at preparing the student for more advanced data analysis.
- GEY 6500 SEMINAR IN PRINCIPLES OF ADMINISTRATION I (3)** This course deals with management problems and practices in the administration of institutions in the field of aging. Consideration is given to federal and state legislation, the management of people, and fiscal management.
- GEY 6501 SEMINAR IN PRINCIPLES OF ADMINISTRATION II (3)** Builds upon GEY 6500. Examines sophisticated administrative processes and methods of organizational change and development. (PR: GEY 6500)
- GEY 6600 PSYCHOLOGICAL AND PHYSICAL ASPECTS OF AGING (3)** Study of normal functioning of major organ systems of the body and basic psychological processes as related to the aging process. Changes in functioning in perceptual, motor, and cognitive areas from the developmental perspective.
- GEY 6612 MENTAL HEALTH AND AGING (3)** Emphasizes knowledge and understanding of the basic concepts of mental health and aging and presents a positive approach to the mental well-being of older adults.
- GEY 6613 PHYSICAL CHANGE, BEHAVIOR, AND AGING (3)** Common, normal and pathological physical changes associated with aging will be discussed as they affect behavior. Aspects of physical and mental illness and pharmacology with gerontological relevance will be surveyed.
- GEY 6614 PSYCHOPATHOLOGY AND AGING I (3)** Examination of the basic principles of abnormal psychopathology and basic concepts of psychopathology. Major theories about behavior and behavior change will be explored. Common gerontological mental health issues will be studied with particular focus upon adjustment to change and loss.
- GEY 6615 PSYCHOPATHOLOGY AND AGING II (3)** A continuation of Psychopathology and Aging I. It familiarizes the student with the psychopathology of aging. Major topics in the DSM-III will be covered. (PR: GEY 6614)
- GEY 6616 MENTAL HEALTH ASSESSMENT OF OLDER ADULTS (3)** Designed to provide the mental health counselor with a basic understanding of evaluation principles and the application of assessment approaches to older adults.
- GEY 6617 GERONTOLOGICAL MENTAL HEALTH COUNSELING I (3)** Examination of mental health treatment modalities and approaches to counseling with older adults. Personality theories and their relationship to counseling will be included emphasizing the development of a treatment plan through the integration of assessment data.
- GEY 6618 GERONTOLOGICAL MENTAL HEALTH COUNSELING II (3)** An advanced course directed at clinical practice with older adults. Appropriate techniques and skills will be integrated with models of psychotherapy, counseling, and personality development. Primary focus will be on intervention with groups, families, and couples. (PR: GEY 6617)
- GEY 6619 MENTAL HEALTH SYSTEMS (3)** An examination of community resources at local, state, and national levels. Methods of linking the mental health system to other systems will be explored. Issues of advocacy, competency, guardianship, ethics, and prevention will be addressed.
- GEY 6901 DIRECTED READING (1-4)** A reading program of selected topics under the supervision of a faculty member. Rpt. to 4 hours. S/U. (PR: Cl)

GEY 6910 DIRECTED RESEARCH (1-4) Rpt. to 4 hours. S/U. (PR: CI)

GEY 6934 SPECIAL TOPICS IN GERONTOLOGY (3) Courses on topics such as pre-retirement, mental health, human services organization, and senior center administration. Rpt. with different subject matter to 6 hours.

GEY 6940 FIELD PLACEMENT (6) An internship in an agency or organization engaged in planning or administering programs for older people or in providing direct services to older people. S/U. (PR: CI)

GEY 6941 FIELD PLACEMENT IN MENTAL HEALTH (6) A highly structured supervised counseling experience providing mental health services to older adults. S/U. (PR: CI)

GEY 6971 THESIS: MASTER'S Var. Rpt. (PR: CI)

HISTORY

Chairperson: Robert P. Ingalls; *Distinguished Research Professor:* L.A. Perez, Jr.; *Professors:* R.O. Arsenaault, J.B. Belohlavek, C.B. Currey, R.P. Ingalls, G.H. Mayer, G.R. Mormino; *Associate Professors:* D.R. Carr, G.H. Kleine, W.M. Murray, K.A. Parker, E.M. Silbert, J.M. Swanson, G.K. Tipps; *Assistant Professors:* G. Benadusi, F. Ottanelli, K. Paul, R.J. Van Neste.

HIS 5215 HISTORY WRITING (2) A course for graduates and advanced undergraduates to combine library, archival, and research skills with an examination of various writing styles. Analytic and synthetic skills are stressed in writing articles, reviews, and essays.

HIS 6085 INTERNSHIP IN HISTORY (1-4) Supervised field placement in a local agency involved in historical planning and preservation. Students will receive practical experience in the fields of archival management, architectural preservation, and state and local research. S/U. (PR: CI)

HIS 6112 ANALYSIS OF HISTORICAL KNOWLEDGE (4) A study of history as a form of knowledge with emphasis on explanatory models and the relationships of social science theory to the problems of historical analysis. (PR: GS)

HIS 6908 INDEPENDENT STUDY Var. Independent study in which students must have a contract with an instructor. Rpt. S/U. (PR: CI)

HIS 6914 DIRECTED RESEARCH Var. ML. Rpt. S/U. (PR: CI)

HIS 6925 COLLOQUIUM IN HISTORY (4) Readings and discussions organized around an in-depth examination of selected topics within the fields. Emphasis of the course is on the review of historiographical, methodological, and interpretative advances as they affect the topics under study. Rpt. as topics vary. (PR: CI)

HIS 6939 SEMINAR IN HISTORY (4) Research in selected topics within the fields selected by the instructor. Rpt. as topics vary. (PR: CI)

HIS 6971 THESIS: MASTER'S Var. Rpt.

HUMANITIES

Chairperson: A.J. Sparks; *Professors:* C.B. Cooper, S.L. Gaggi, T.B. Hoffman (*Emeritus*), H. Juergensen (*Emeritus*), G.S. Kashdin (*Emeritus*), E.M. MacKay (*Emeritus*), D. Rutenberg, A.J. Sparks, S.A. Zylstra; *Assistant Professor:* J.P. D'Emilio.

HUM 6412 STUDIES IN THE HUMANITIES OF INDIA (3) Examples from the arts and letters of India and the relationship of these arts to the Hindu and Buddhist philosophy-religions.

HUM 6414 STUDIES IN THE HUMANITIES OF CHINA (3) Examples from the arts and letters of China; their relationship to Taoism, Confucianism, and other Chinese philosophies; Western influences on twentieth century Chinese arts and letters.

HUM 6415 STUDIES IN JAPANESE ARTS AND LETTERS (3) Examples from the arts and letters of Japan, their relationship to Zen Buddhism and other Japanese philosophy-religions; Western influences on 20th century Japanese arts and letters.

- HUM 6453 STUDIES IN AMERICAN ARTS AND LETTERS I (3)** Study of selected works dealing with the development of cultural patterns on the western frontiers and their effects on aesthetic judgement. From 1790 to 1890.
- HUM 6456 STUDIES IN AMERICAN ARTS AND LETTERS II (3)** Examples from the arts and letters of the U.S.; analyses of their relationships to the concepts of progress and aesthetic judgement. From 1890 to present.
- HUM 6465 STUDIES IN LATIN AMERICAN ARTS AND LETTERS (3)** Analysis of selected Latin American works of art in their cultural context. Rpt. once with change of content.
- HUM 6475 STUDIES IN CONTEMPORARY ARTS AND LETTERS (3)** Concentration on major artists and recent trends. Rpt. once with change of content.
- HUM 6493 STUDIES IN CLASSICAL ARTS AND LETTERS (3)** Examples from the arts and letters of ancient Greece and their relationships to Aegean myths, religions, and philosophies. Classical Greek influences on later cultures. Rpt. once with change of content.
- HUM 6494 STUDIES IN MEDIEVAL ARTS AND LETTERS (3)** Studies in medieval philosophies, visual arts, music, literature, and architecture and their inter-relationships. Rpt. once with change of content.
- HUM 6495 STUDIES IN RENAISSANCE ARTS AND LETTERS (3)** Masterpieces and major artists of the Renaissance in Continental Europe and England. Rpt. once with change of content.
- HUM 6496 STUDIES IN ENLIGHTENMENT ARTS AND LETTERS (3)** Studies in painting, sculpture, music, literature, and architecture in relation to philosophical determinism and political absolutism. Rpt. once with change of content.
- HUM 6497 STUDIES IN NINETEENTH CENTURY ARTS AND LETTERS (3)** Examples from the arts and letters of the nineteenth century, their relationship to philosophical, social, and historical developments, and to the arts and letters of the twentieth century. Rpt. once with change of content.
- HUM 6909 INDEPENDENT STUDY** Var. Independent study in which student must have a contract with an instructor. Rpt. S/U.
- HUM 6915 DIRECTED RESEARCH** Var. Rpt. S/U.
- HUM 6939 SELECTED TOPICS IN HUMANITIES (1-3)** Each topic is a course of study in a subject not covered by a regular course. Rpt. with a change of content.
- HUM 6971 THESIS: MASTERS (1-3)** In consultation with an adviser, the student plans, organizes, and writes a thesis on a topic in interdisciplinary arts and ideas.

INTERDISCIPLINARY SOCIAL SCIENCES

Director: J.B. Snook; *Lecturer:* R. Gagan.

- ISS 5934 SELECTED TOPICS (1-3)** Interdisciplinary studies with course content dependent on student demand and instructor's interest. Rpt. as topics vary. (PR: CI and senior standing or GS)
- ISS 6900 DIRECTED READING (1-3)** A supervised program of intensive reading of interdisciplinary materials of specific interest. Rpt. (PR: CI and GS)
- ISS 6910 DIRECTED RESEARCH** Var. Rpt. S/U. (PR: GR, ML)

SCHOOL OF LIBRARY AND INFORMATION SCIENCE

Director: F.C. Pfister; *Professors:* J.A. McCrossan, F.C. Pfister, A. Prentice; *Associate Professors:* B. El-Hadidy, H. Smith, J.M. Knego, T.C. Wilson; *Assistant Professors:* V.L. Gregory; *Courtesy Associate Professor:* Y.L. Ralston

- LIS 5315 INSTRUCTIONAL GRAPHICS (3)** Theoretical aspects, planning and production of instructional graphic materials. The theory of graphic communications. Interpreting needs for instructional materials appropriate for given behavioral objectives. (PR: CI)
- LIS 5333 TV IN SCHOOLS AND LIBRARIES (3)** Small format video tape recordings and the utilization of open and closed broadcasts in schools and libraries.
- LIS 5404 FOUNDATIONS OF LIBRARIANSHIP (3)** Introduction to the study of library service; history; organization; specialized literature; outstanding leaders; current trends, issues, and problems. Place of the library in society with its contributions to that society.
- LIS 5937 SELECTED TOPICS IN LIBRARY STUDIES (1-4)** Covers topics in such areas as collection development, reference and technical services, and administration. (PR: CI)
- LIS 6110 HISTORY OF LIBRARIES (3)** Development of libraries as found from the earliest records to the great libraries of modern times, and the library as a social institution.
- LIS 6111 HISTORY OF CHILDREN'S LITERATURE (3)** Historical bibliographical survey of imaginative and information literature for children.
- LIS 6202 INTRODUCTION TO BIBLIOTHERAPY (3)** History, theory, and practice of bibliotherapy. Conflicting definitions and their resolutions. For continuing education of librarians, advanced majors and practitioners of related disciplines. (PR: CI)
- LIS 6203 READING GUIDANCE PROGRAMS IN LIBRARIES AND CLASSROOMS (3)** Working with factors and forces influencing reading habits of children and youth; programs for teaching investigative and library skills materials and methods for guidance of reading, listening, and viewing.
- LIS 6206 ADULT SERVICES IN LIBRARIES (3)** Traditional and innovative services for adults in public and other types of libraries, including those for special groups, such as the aging, handicapped, and institutionalized. (PR: LIS 6520 or CI)
- LIS 6225 STORYTELLING (3)** Building storytelling programs for school and public libraries or other educational institutions. Analysis of historical aspects, material suitable for use and audience reaction. (PR: LIS 6586 or CI)
- LIS 6260 INFORMATION SCIENCE IN LIBRARIANSHIP (3)** Historical overview of the emergence of information science as a discipline. The fundamental concepts of information retrieval systems and subsystems, related information technologies, including indexing and abstracting, and their applications to the field of librarianship.
- LIS 6262 LIBRARY SYSTEMS PLANNING (3)** Application of systems planning and data processing technology to library files. Emphasis on analysis of selected library subsystems.
- LIS 6271 RESEARCH METHODS IN LIBRARIANSHIP (3)** Overview of present status of research in library and information science; introduction to research methods and their application to librarianship; designed to prepare students to evaluate and plan research studies relating to library and information science.
- LIS 6312 PREPARING INSTRUCTIONAL MEDIA (3)** Fundamentals of preparing and using audiovisuals as they relate to the communication process.
- LIS 6402 ADVANCED LIBRARY ADMINISTRATION (3)** Applications of staff management principles to library situations. Includes staff roles in current and future operations, application of library performance measures to determine staff effectiveness; preparation of staff manuals; problems of special classes of library workers, such as volunteers and students. (PR: CI)
- LIS 6409 INTRODUCTION TO LIBRARY ADMINISTRATION (3)** Behavioral approach to libraries as organizations; administrative principles, theories, and problems of all types of libraries; methods of administration; use of case studies, role plays, and in-basket exercises.

- LIS 6432 SEMINAR IN ACADEMIC LIBRARIES (3)** Identification of problems and critical examination of methods in administrative areas of technical, student, and teaching staff services, fiscal and legal responsibilities, staff organization and supervision in academic libraries. (PR: LIS 6409)
- LIS 6445 SEMINAR IN PUBLIC LIBRARIES (3)** Critical examination of public and institutional library administration, services, resources, and facilities at the municipal, county, and regional levels. Role of state and federal governments in library development. (PR: LIS 6409 or CI)
- LIS 6455 THE ORGANIZATION AND ADMINISTRATION OF THE SCHOOL MEDIA CENTER (3)** Media quarters, facilities, collections, equipment, and services. Principles of organization and administration of media programs in elementary and secondary schools. Field trips to area media centers required. (PR: CI)
- LIS 6472 SEMINAR IN SPECIAL LIBRARIES (3)** Identification of problems and critical examination of methods in administrative areas of technical and special service clientele; fiscal and legal responsibilities, staff organization, and services in special libraries. (PR: LIS 6409)
- LIS 6473 LAW LIBRARIANSHIP (3)** All aspects of law librarianship, including administration, acquisition, organization, and use of information resources for persons in the health fields. Field trip may be required. (PR: LIS 6260, LIS 6409, LIS 6608, LIS 6735, or CI)
- LIS 6475 HEALTH SCIENCES LIBRARIANSHIP (3)** All aspects of health science librarianship, including administration, acquisition, organization, and use of information resources for persons in the health fields such as physicians, medical students, nursing students, allied health personnel and students, and researchers. Field trip may be required. (PR: LIS 6260, LIS 6409, LIS 6608, LIS 6735 or CI)
- LIS 6506 AUDIOVISUAL UTILIZATION (3)** Examination (and utilization) of non-print media. Characteristics of media equipment and paradigms of use.
- LIS 6508 THE CURRICULUM AND INSTRUCTIONAL TECHNOLOGY (3)** Effective utilization of instructional materials as they relate to specific areas of curriculum in elementary and high school programs.
- LIS 6520 BUILDING LIBRARY COLLECTIONS (3)** Developmental approach to building library collections of both print and non-print materials. Emphasis upon evaluation, selection, and acquisition of library materials as they uphold the objectives of the institutions for which they are selected and acquired. (PR: LIS 6608 or CI)
- LIS 6572 BOOKS AND RELATED MATERIALS FOR YOUNG ADULTS (3)** Young adult materials for use in secondary school libraries, young adult sections of public libraries, and other institutions serving youth. Equal emphasis upon (1) selection principles and bibliographical sources, as well as upon (2) utilization in terms of service to the young adult.
- LIS 6586 MATERIALS FOR CHILDREN (3)** Examination of materials for all institutions in which children are served: school media centers, public libraries, kindergartens, etc. Stress on selection aids, reviewing techniques, utilizations.
- LIS 6608 BASIC INFORMATION SOURCES AND SERVICES (3)** An examination of the basic sources of information in the general library; of bibliographical control of all communication media, with emphasis on those tools of most value to general reference services.
- LIS 6609 AUTOMATED INFORMATION SOURCES AND SERVICES (3)** Principles of online searching and characteristics of machine-readable bibliographic data bases. Includes two credit hours of laboratory providing hands-on research experience. (PR: LIS 6608, LIS 6260, or CI)
- LIS 6610 INFORMATION SOURCES AND SERVICES IN THE HUMANITIES (3)** Consideration of the bibliographical and reference materials in the humanities with training and practice in their use for solving problems in the reference service. (PR: LIS 6608 or CI)

- LIS 6620 INFORMATION SOURCES AND SERVICES IN THE SOCIAL SCIENCES (3)**
Consideration of the bibliographical and reference materials in the social sciences with training and practice in their use for solving problems in reference service. (PR: LIS 6608)
- LIS 6630 INFORMATION SOURCES AND SERVICES IN SCIENCE AND TECHNOLOGY (3)**
Study of representative reference sources in pure and applied sciences with equal attention given to typical problems encountered in scientific and technological reference service. (PR: LIS 6608 or CI)
- LIS 6661 GOVERNMENT DOCUMENTS (3)** The nature of state, federal, United Nations, and international documents, their reference and research value; the techniques of acquisition, organization, and reference use.
- LIS 6724 CLASSIFICATION AND CATALOGING OF NON-BOOK MATERIALS (3)** Principles and practices in cataloging and organizing non-book materials. (PR: LIS 6735 or CI)
- LIS 6735 TECHNICAL SERVICES IN LIBRARIES (3)** Principles of general library practice in technical service operations. Emphasis on descriptive cataloging, and use of unabridged Dewey Decimal Classification.
- LIS 6745 ADVANCED CATALOGING (3)** Introduction to the practice in using selected schedules of Library of Congress Classification System and the Library of Congress Subject Heading List; changing policies and procedures in cataloging and an introduction to the use of the MARC format for inputting cataloging data into machine readable files. (PR: LIS 6735)
- LIS 6906 INDEPENDENT STUDY (1-4) S/U.** (PR: 20 hours in program and consent of adviser)
- LIS 6946 SUPERVISED FIELD WORK (3)** Supervised experience in an approved cooperating library. Includes practice work, seminar sessions and individual conferences, a progress report, and a final report on the field experience. (PR: CI)
- LIS 7938 ADVANCED SEMINAR IN LIBRARIANSHIP (1-4)** Seminar in advanced areas of current importance in library, media, and information science. Primarily for students enrolled in specialist and doctoral programs. (PR: CI)

MARINE SCIENCE

Chairperson: P.R. Betzer; *Distinguished Research Professors:* W.M. Sackett, J.J. Walsh; *Professors:* P.R. Betzer, N.J. Blake, R.H. Byrne, K.L. Carder, L.J. Doyle, K.A. Fanning, A.C. Hine, T.L. Hopkins, P. Hallock Muller, J.H. Paul, J.J. Torres, E.S. Van Vleet, R.H. Weisberg; *Associate Professors:* J.S. Compton, B. Galperin, M. Luther, G.A. Vargo, R.R. Wilson; *Assistant Professors:* P.G. Coble, F.E. Müller-Karger, D.F. Naar.

- OCB 6050 BIOLOGICAL OCEANOGRAPHY (3)** Study of life in the oceans, its rates and processes, and its interaction with the physical and chemical environment. Lec. (PR: GS or CI)
- OCB 6567 PHYTOPLANKTON ECOLOGY (3)** An introduction to the physiology and ecology of marine phytoplankton. Emphasis will be on those variables and interactions that regulate photosynthesis, production, nutrient kinetics, and regeneration, growth, spatial distribution, losses, and succession. (PR: B.S. in Biology, OCB 5050, or CI)
- OCB 6567L METHODS IN PHYTOPLANKTON ECOLOGY (3)** Laboratory and field procedures for identification, culture techniques, enumeration, growth and nutrient uptake rates, photosynthesis, biomass estimates, enzyme kinetics, etc. will be covered. Practical application of the techniques will be made in class-designed experiments and/or a 5-10 day research cruise. (PR: B.S. in Biology, OCB 5050, or CI)
- OCB 6646 MARINE ZOOGEOGRAPHY (3)** The geographical distribution of animals in the marine environments of the world including the major habitats of the benthic and pelagic realms. Studies of the relationships between distributional and evolutionary patterns. (PR: B.S. in Biology, OCB 5050, or CI)
- OCB 6666 ECOLOGICAL PHYSIOLOGY (3)** The study of those physiological mechanisms that enable organisms to live in their environment, and deal with changes in the environment.

Coursework is focused on aquatic ecosystems. Topics include osmotic and ionic regulation nitrogen excretion, feeding and digestion, respiration, temperature, and energetics. Lab separate. (PR: B.S. in Biology, 1 year general and Organic Chemistry, OCB 5050, or C).

OCB 6671 METHODS IN BIOLOGICAL OCEANOGRAPHY (1) To acquaint students with field and laboratory equipment and techniques currently used in Biological Oceanography. Emphasis will be on field problems, especially those requiring research at sea. (PR: CI)

OCB 6931 SPECIAL TOPICS IN ICHTHYOLOGY (1-3) Presentation and discussion of ichthyological topics from the primary literature. The objectives of this course are: (1) to review and discuss the primary literature on ichthyological topics, both current and historical; (2) to provide a forum in which students can develop discussion skills; (3) to identify, through examination of the literature, areas of needed research; (4) to provide means by which graduate students can receive formal course instruction in a non-lecture format. S/U only. (PR: GS or CI)

OCC 6050 CHEMICAL OCEANOGRAPHY (3) The ocean as a chemical system, including composition, physical-chemical aspects, role of nutrients, trace metals, interaction between bottom and overlying water, organic matter, and stable and radioactive isotopes. Lec (PR: CHM 2046 and GS or CI)

OCC 6057 METHODS IN CHEMICAL OCEANOGRAPHY (1) An intensive study of the use and limitations of field and laboratory equipment that is a standard part of chemical oceanographic research into the behavior of dissolved and particulate constituents in seawater. (PR: OCC 5050 or CI)

OCC 6067 MARINE POLLUTION (3) Marine pollutant sources, reservoirs, transport processes, and dynamics. Topics include heavy metals, chlorinated hydrocarbons, radioactivity, petroleum, pathogens, and thermal pollution including functional and physiological responses of marine organisms. (PR: OCC 5050 or CI)

OCC 6216 MARINE ORGANIC CHEMISTRY (3) Distribution and biogeochemical cycling of organic matter in the oceans. Topics include carbohydrates, proteins, lipids, humics, pheromones, interaction with trace metals, isotopic fractionation, microbial alternations, and biochemical tracers. (PR: B.S. in Biology or Chemistry, Biochemistry, OCC 5050 or CI)

OCE 6908 INDEPENDENT STUDY Var. Independent study in which students must have a contract with an instructor. Rpt. S/U.

OCE 6934 SELECTED TOPICS IN OCEANOGRAPHY (1-3) Special topics in Biological, Chemical, Geological, and Physical Oceanography. (PR: CI)

OCE 6939 GRADUATE SEMINAR IN OCEANOGRAPHY (1) Rpt. S/U. (PR: GS)

OCE 6942L FIELD STUDIES IN MARINE SCIENCE (3) Combination of classroom study with the collection, analysis, and interpretation of field data to attack specific problems in marine science both for deep sea and near shore environments. (PR: One of the following: OCB 5050, OCB 6671, OCC 5050, OCC 6057, OCG 6075, OCP 5051, OCP 6056, OR CI)

OCE 6971 THESIS: MASTER'S Var. Rpt.

OCE 6972 DIRECTED RESEARCH Var. Rpt. S/U. (PR: GR, ML)

OCE 7910 DIRECTED RESEARCH Var. Rpt. S/U. (PR: GR, Ph.D. level)

OCE 7980 DISSERTATION: DOCTORAL Var. (PR: Admission to Candidacy)

OCG 6050 GEOLOGICAL OCEANOGRAPHY (3) Marine geology including plate tectonics; coastal, shelf and pelagic sedimentation; geochemical cycling; and sedimentary history of the ocean basins. Lec (PR: GS or CI)

OCG 6075 METHODS IN GEOLOGICAL OCEANOGRAPHY (1) Description and application of the modern techniques used to investigate Geology and Geophysics. (PR: OCG 5050 or CI)

OCG 6086 GEOLOGY OF CONTINENTAL MARGINS (3) Analysis of tectonic, structural and stratigraphic development and general geologic history of the major types of continental margins. Includes interpretation of seismic data. (PR: B.S. in Geology, OCG 5050, or CI)

- OCG 6356C STRATIGRAPHIC INTERPRETATION OF SEISMIC DATA (3)** Study of seismic reflection data for the purpose of determining structural and sedimentological development, facies distribution, and general geological history of stratigraphic packages. Course includes fundamentals of seismic reflection and depositional sequence/seismic facies analyses. (PR: B.S. in Geology, OCG 5050, or CI)
- OCG 6455 MARINE ISOTOPE GEOCHEMISTRY (3)** Study of stable and radioactive isotope variations in the marine environment and the use of these variations as tracers and in determining ages, rates and paleoclimatic conditions. (PR: Chemical Oceanography or CI)
- OCG 6551C SCANNING ELECTRON MICROSCOPY: THEORY AND TECHNIQUE (4)** Theory and practical application of the scanning electron microscope and the energy dispersive X-ray analyzer. Emphasis is on independent operation of the instruments, preparation techniques for specimens, and interpretation of results. (PR: GS, one year Physics, or CI)
- OCG 6656C MARINE MICROPALAEONTOLOGY (4)** Introduction to the microscopic marine fauna and flora, found in the fossil sedimentary record. Emphasis is placed on the ecology, paleoecology, paleontology, and biostratigraphic record of calcareous and siliceous microfossils. (PR: B.S. in Geology or Biology, OCG 5050, or CI)
- OCG 6660 MARINE PALEOECOLOGY (3)** Interpretation of the relationships between ancient organisms and their environment with emphasis on the substrate. Applications of modern benthic marine environments and sediment-organism relationships to fossil record. (PR: Background in sedimentology, paleontology or marine ecology, or CI)
- OCG 6664 PALEOCEANOGRAPHY (3)** The study of the development of the ocean system through geologic history, including study of the tectonic framework, sea level history, paleoclimatology, paleocirculation within the ocean basins, and the evolution of marine biota. Not Rpt. S/U. (PR: OCB 5050, OCC 5050, OCG 5050, and OCP 5051, or CI)
- OCP 6050 PHYSICAL OCEANOGRAPHY (3)** The world ocean including its morphology, physical properties, currents, waves, tides, heat and water budgets, and related topics. Lec. (PR: Diff/int. calculus, General Physics, and GS or CI)
- OCP 6056 METHODS IN PHYSICAL OCEANOGRAPHY (1)** Field and laboratory techniques for acquisition, reduction, display and discussion of physical oceanographic data (e.g., waves, tides, currents, dissolved, and suspended constituents). (PR: MAC 3413, OCC 5050 or OCP 5051, and CI)
- ZOO 5456C ICHTHYOLOGY (4)** Evolution, systematics, structure, behavior, physiology, and ecology of fishes. (PR: Senior or GS; BSC 2010, BSC 2011, ZOO 3713C. PCB 4674 is suggested)

MASS COMMUNICATIONS

Director: D.L. Dickerson; *Professors:* D.L. Dickerson, R.L. Kerns, G.M. Killenberg, M. Lucoff; *Associate Professors:* D.S. Bagley III, T.M. Counts, Jr., R.W. Dardenne, W.G. Fudge, L.Z. Leslie, H. Regis; *Assistant Professors:* K.F. Brown, R. Miller, B. Petersen, G.L. Werner, R. Wilber; *Lecturers:* S.K. Laurion, D. Togie, Jr.

- ADV 6503 MEDIA AND MARKET ANALYSIS (3)** An advanced study of the demographic, geographic, and social-psychographic descriptions of media and markets to analyze mass media audiences, costs, and uses to aid in solving marketing communications problems for advertisers.
- ADV 6602 ADVERTISING MARKETING DECISIONS (3)** A study of managerial problems in planning, controlling, and evaluation of advertising with emphasis on the decisions concerning products, pricing, competitive positioning, distribution, and promotion.
- JOU 6107 ADVANCED URBAN AFFAIRS REPORTING (3)** Problems and methods of reporting urban affairs, including municipal government, and politics: city, county, and state. Research/analyses of current issues.

- JOU 6191 SEMINAR: CONTEMPORARY NEWSPAPER PROBLEMS (3)** A study of the role of the free press in a democratic society and its efforts to fulfill its social and ethical responsibilities by analyses and discussions of the problems which face the reporter, the editor, and the publisher.
- MMC 6306 INTERNATIONAL COMMUNICATIONS SEMINAR (3)** Mass Communications as national and international systems; flow of the news, international news communications networks; satellite communications; overseas activities of American media interest; international propaganda; communication and national development; international media organizations and their activities.
- MMC 6401 MASS COMMUNICATION THEORY (3)** The study of mass communications theories, structures, influences, and their relationships to institutions in American society.
- MMC 6421 RESEARCH METHODS IN MASS COMMUNICATIONS (3)** The theory and practice of quantitative, historical, and critical research methods, and their applications to the study of mass communications. Emphasis in quantitative methods on experimental and survey research, statistical analysis, and evaluation of data. Rpt. to 9 hours.
- MMC 6605 PUBLIC OPINION AND THE MASS MEDIA (3)** The influence of public opinion on private and public institutions in a democratic society and the role of the mass media in opinion formation. The nature of persuasion in establishing or modifying public opinion, and perspectives on the social responsibilities of communications.
- MMC 6612 SEMINAR: GOVERNMENT AND THE MEDIA (3)** Interrelationships of the media and government at the judicial, executive and legislative levels. Focus is on legal limitations and privileges of the media; theory and philosophy of the First Amendment; research procedures in court and administrative agency documents.
- MMC 6900 DIRECTED READING IN MASS COMMUNICATIONS (1-3)** Readings in specialized areas of Mass Communications as agreed to by the instructor and the student by contract. Rpt. up to 3 hours. S/U. (PR: CI and permission of graduate adviser)
- MMC 6910 INDIVIDUAL RESEARCH IN MASS COMMUNICATIONS (1-3)** Independent study in which the student must have a contract with the instructor to study an area not covered by other courses in the graduate curriculum. Rpt. up to 3 hours. S/U. (PR: CI and permission of graduate adviser)
- MMC 6921 INTRODUCTORY MASS COMMUNICATIONS SEMINAR (3)** Introduction to the aims and methodologies of graduate study in Mass Communications, its development and relationship to the arts and sciences, and the relationship of the scholarly aspects of media studies to professional media practice; bibliographical resources, and overview of research methods and scholarly style. (PR: Admission to the Graduate Program or CI)
- MMC 6936 SELECTED TOPICS IN MASS COMMUNICATIONS (3)** Courses designed to meet current, specific topics of interest to students and instructors. Rpt. up to 9 hours.
- MMC 6945 PROFESSIONAL PRACTICUM (3)** Practicum will consist of placement with a media related organization selected by the student and approved and supervised by the graduate adviser. S/U. (PR: 12 graduate hours in Mass Communications)
- MMC 6950 NON-THESIS PROJECT (3)** Completion of a major project under supervision. Topic will be selected according to student's needs and interests. (PR: CI and permission of graduate adviser.)
- MMC 6971 THESIS: MASTER'S** Var. Rpt. up to 6 hours.
- PUR 6603 PUBLIC RELATIONS COUNSELING (3)** Relationship of the public relations counselor to the client or employer; counseling in corporate, non-profit, and governmental organizations; writing and presenting PR programs to the client; management and operation of counseling firms.

PUR 6604 STANDARDS OF PUBLIC RELATIONS PRACTICE (3) Historical perception of ethical practice; the professional's role as advocate for the client and ombudsman between the client and his public; codes of conduct; administrative and statutory law governing the practice; progress toward professional status.

RTV 6400 HISTORY AND CRITICISM OF BROADCASTING (3) The origin and development of broadcast programming stressing how radio and television content affect social, cultural, and political values. Study will also include critical examination of broadcast aesthetics and those factors which determine program form and function.

RTV 6702 TELECOMMUNICATIONS AND PUBLIC POLICY (3) An exploration of the emerging problems of telecommunications policy, especially the regulation of news systems of communications, and the development of communications policy in a post-industrial age.

VIC 6005 SEMINAR IN VISUAL COMMUNICATIONS (3) Development of message preparation in the integration of visual and verbal images, emphasis on the management and planning of still photography, video, film, graphic design, and typography in effective communication.

MATHEMATICS

Chairperson: K.L. Pothoven; *Distinguished Service Professor:* A.W. Goodman; *Distinguished Research Professor:* E.B. Saff; *Professors:* W.E. Clark, M.E.H. Ismail, A.G. Kartsatos, J.J. Liang, Y.F. Lin, M.N. Manouagian, A. Mukherjee, R.K. Nagle, A.N.V. Rao, J.S. Ratti, V. Totik, C.P. Tsokos, C.A. Williams; *Associate Professors:* R.W.R. Darling, S. Isaak, S.Y. Lin, G.L. McColm, M.M. McWaters, M.E. Parrott, K.L. Pothoven, J.H. Reed, B. Shekhtman, W.R. Stark, E.A. Thieleker, Y. You, F.J. Zerla; *Assistant Professors:* R.W. Oberste-Vorth, J.F. Pedersen, K.M. Ramachandran, W.E. Williams.

MAA 5306 REAL ANALYSIS I (3) Set theory, the real number system, Lebesgue measure and integration on the real line. (PR: MAA 4212)

MAA 5307 REAL ANALYSIS II (3) Metric spaces, Banach spaces and function spaces; measure and integration on abstract spaces. (PR: MAA 5306)

MAA 5405 APPLIED COMPLEX VARIABLES (3) Complex numbers, analytic and harmonic functions, series, contour integrals, residue theory, conformal mappings; a survey course emphasizing techniques and applications. (PR: MAP 4302)

MAA 5406 TOPICS IN COMPLEX ANALYSIS (3) Univalent and multivalent functions, entire functions, approximation theory in the plane. (PR: MAA 5405)

MAA 6406 COMPLEX ANALYSIS I (3) Linear transformations, analytic functions, conformal mapping, Cauchy's theorem and applications, power series, partial fractions and factorization, elementary Riemann surfaces, Riemann mapping theorem. (PR: MAA 5405 or CI)

MAA 6506 FUNCTIONAL ANALYSIS I (3) Normed linear spaces and topological vector spaces; open mapping, closed graph, and Hahn-Banach Theorem, UB principle, compact operators, dual spaces. (PR: MAA 5307 & MAS 5107 or CI)

MAA 6507 FUNCTIONAL ANALYSIS II (3) Hilbert spaces, spectral theory, and other topics. (PR: MAA 6506)

MAA 6616 ABSTRACT INTEGRATION (3) Measure as abstract integration; Riesz representation theorem, Fubini's Theorem, Radon-Nikodym Theorem, LP spaces. (PR: MAA 5307 or CI)

MAA 6617 TOPICS IN INTEGRATION (3) Topics in: weak convergence of measures on metric spaces, Haar integration and Fourier analysis in groups, stochastic integration. (PR: MAA 6616)

MAD 5101 LISP: PROGRAMMING WITH ALGEBRAIC APPLICATIONS (3) Programming in LISP, functional languages, foundations of the Lambda Calculus, and algebraic applications (theorem proving and game playing.) (PR: MHF 5306 or MAD 6510 or MAS 5311 or CI)

- MAD 5305 GRAPH THEORY (3)** Brief introduction to classical graph theory (4-color theorem, etc.), directed graphs, connected digraphs, condensations, incidence matrices, Polya's Theorem, networks. (PR: CI)
- MAD 6510 ANALYSIS OF ALGORITHMS (4)** Mathematical theory of algorithms for information processing, including time and space requirements of algorithms, construction of optimal algorithms. (PR: MHF 4102 or MAS 4301 or CI)
- MAD 6616 ALGEBRAIC AUTOMATA THEORY (3)** Deterministic and non-deterministic finite automata, Mealy and Moore machines, push-down automata, Turing machines, regular languages, context free languages, halting problem, and universal Turing machines. (PR: MHF 4102 or MAS 4301 or CI)
- MAD 6617 ALGEBRAIC CODING THEORY (3)** Linear block codes over an arbitrary finite field: Hamming, Golay, BCH, quadratic residue, Reed-Muller, and MDS codes, the MacWilliams identity, bounds on minimum distance, and relationship to design theory. (PR: MAS 5311 or CI)
- MAE 5875 ABSTRACT ALGEBRA FOR TEACHERS (3)** Groups, fields, vector spaces as they relate to high school algebra and geometry. (No credit for Mathematics majors.) (PR: MAS 3103 and MAS 4301 and Bachelor's degree or CI)
- MAE 5877 MATHEMATICAL ANALYSIS I FOR TEACHERS (3)** Limits, continuity, derivatives, differentials. (No credit for Mathematics majors.) (PR: MAC 3313 and Bachelor's degree or CI)
- MAP 5205 MATHEMATICAL OPTIMIZATION THEORY I (3)** Unconstrained and linearly constrained extrema, linear and nonlinear programming applied to matrices and quadratic forms, Lagrange multiplier rule for equality constraints. (PR: MAS 3103 and MAA 4211, or equiv.)
- MAP 5316 ORDINARY DIFFERENTIAL EQUATIONS I (3)** Existence and uniqueness theory, properties of solutions, linear systems, stability theory, Sturm-Liouville theory. (PR: MAP 4302 and MAA 4211, or CI)
- MAP 5317 ORDINARY DIFFERENTIAL EQUATIONS II (3)** Topics selected from fixed point theory, comparison theory, oscillation theory, Poincaré-Bendixson theory, Lyapunov functions, eigenfunction expansions. (PR: MAP 5316 and MAA 5306 or CI)
- MAP 5345 APPLIED PARTIAL DIFFERENTIAL EQUATIONS (3)** Separation of variables, the heat equation, wave equation, Laplace's equation, classification, Green's functions with emphasis on applications. (PR: MAP 5407 or CI)
- MAP 5407 METHODS OF APPLIED MATHEMATICS (3)** Sturm-Liouville theory, Fourier series, Green's functions, matrix methods for linear systems of ordinary differential equations, and topics from calculus of variations, control theory, numerical solutions of differential equations. (PR: MAP 4302 or CI)
- MAP 6336 THEORY OF ORDINARY DIFFERENTIAL EQUATIONS (3)** Advanced topics selected from: existence and uniqueness theory, singularity theory, asymptotics and stability, eigenfunctions, perturbations, topological methods, spectral theory of differential operators. (PR: MAA 5307 and MAP 5317, or CI)
- MAP 6356 PARTIAL DIFFERENTIAL EQUATIONS (3)** Advanced topics from: elliptic boundary value problems, semigroup theory, Sobolev spaces, degree theory, regularity, evolution equations. (PR: MAP 5345 and MAA 5307, or CI)
- MAS 5107 ADVANCED LINEAR ALGEBRA (3)** Finite-dimensional vector spaces over arbitrary fields, dual spaces, canonical forms for linear transformations, inner product spaces, orthogonal, unitary, and self-adjoint operators and quadratic forms. (PR: MAS 3103 and MAS 4301; CR MAS 5311)
- MAS 5215 NUMBER THEORY (3)** Fundamental theorem of arithmetic, modular arithmetic, Chinese remainder theorem, Mersenne primes, perfect numbers, Euler-Fermat theorem,

pseudoprimes, primitive roots, law of quadratic reciprocity, factorization and primality testing algorithms. (PR: MAS 3103 and MAS 4301, or CI)

MAS 5311 ALGEBRA I (3) Group theory: Sylow theorems; classification of groups of small order. Ring theory: ideals, quotient rings, polynomial rings, Euclidean domains, principal ideal domains and unique factorization. (PR: MAS 3103 and MAS 4301 or CI)

MAS 5312 ALGEBRA II (3) Finitely generated modules over a principal ideal domain, basic field theory, finite fields, Galois theory. (PR: MAS 5311 or CI)

MAT 5932 SELECTED TOPICS (3) Each course covers a single topic outside the usual curriculum. (PR: CI)

MAT 6908 INDEPENDENT STUDY (Var.) Independent study in which student must have a contract with an instructor. Rpt. S/U.

MAT 6911 DIRECTED RESEARCH (Var.) Rpt. S/U. (PR: Master's degree)

MAT 6932 SELECTED TOPICS (3) Each course covers a single topic outside the usual curriculum. (PR: CI)

MAT 6939 GRADUATE SEMINAR (1-2) Direction of this seminar is by a faculty member. Students are required to present research papers from the literature. S/U.

MAT 6971 THESIS: MASTER'S (Var.) Rpt.

MAT 7912 DIRECTED RESEARCH (Var.) Rpt. S/U. (PR: Ph.D. level)

MAT 7980 DISSERTATION: DOCTORAL (Var.) Rpt. (PR: Admission to Candidacy)

MHF 5306 MATHEMATICAL LOGIC AND FOUNDATIONS I (3) Two-course sequence covering: predicate calculus and classical model theory; transfinite set theory and the system ZFC; recursion theory and decidability. (PR: MAS 4301 or CI)

MHF 5405 HISTORY OF MODERN MATHEMATICS (3) Traces the development of mathematical ideas from the Renaissance to the 19th century. Open to non-majors. (PR: MAC 3313)

MHF 6307 MATHEMATICAL LOGIC AND FOUNDATIONS II (3) Continuation of MHF 5306. (PR: MHF 5306)

MTG 5316 TOPOLOGY I (3) Topological spaces, continuity, homeomorphisms, connectedness, compact spaces, separation axioms, product spaces. (PR: MAA 4212 and MHF 4102)

MTG 5317 TOPOLOGY II (3) The fundamental group; elements of homotopy theory and homology theory. (PR: MTG 5316)

STA 5166 COMPUTATIONAL STATISTICS I (3) Statistical analysis of data by means of statistics package programs. Regression, ANOVA, discriminant analysis, and analysis of categorical data. Emphasis is on inter-relation between statistical theory, numerical methods, and analysis of real life data. (PR: STA 4321 and CGS 3422, or CI)

STA 5228 SAMPLING TECHNIQUES (3) Sampling versus total enumeration. Planning of a survey. Statistical sampling methods and their analysis; simple, stratified, systematic cluster, and double and multistage sampling. Use of auxiliary information in sampling. Ratio and regression estimates. Case study. (PR: STA 4321 or CI)

STA 5326 MATHEMATICAL STATISTICS (3) Sample distribution theory, point & interval estimation, optimality theory, statistical decision theory, and hypothesis testing. (PR: STA 5446)

STA 5446 PROBABILITY THEORY I (3) Axioms of probability, random variables in Euclidean spaces, moments and moment generating functions, modes of convergence, limit theory for sums of independent random variables. (PR: MAA 4212 and STA 4442, or CI)

STA 5526 NON-PARAMETRIC STATISTICS (3) Theory and methods of non-parametric statistics, order statistics, tolerance regions, and their applications. (PR: STA 5326 or CI)

STA 6167 COMPUTATIONAL STATISTICS II (3) Design of statistics programs, pivoting and other technology used in stepwise regressions, algorithms in non-linear regression, balanced and unbalanced ANOVA. Iteration methods for numerical solutions of likelihood equations. (PR: STA 5166)

STA 6206 STOCHASTIC PROCESSES (3) Poisson processes, renewal theorems, Markov chains on a countable state space, continuous-time Markov processes with a countable state space, birth and death processes, branching processes, introduction to Brownian motion. (PR: STA 5446)

STA 6208 LINEAR STATISTICAL MODELS (3) Distribution theory, estimation, and hypothesis testing for the general linear model. Experimental designs, including randomized block and incomplete block designs. Multiple regression, ANOVA, and ANCOVA. (PR: STA 5167 or STA 5326 or CI)

STA 6447 PROBABILITY THEORY II (3) Characteristic functions, central limit theorem, martingale inequalities and convergence theorems, optional stopping, ergodic theorems and applications. (PR: STA 5446 and MAA 5306 or CI)

STA 6746 MULTIVARIATE ANALYSIS (3) Multivariate normal distribution; its properties and inference; matrix random variables; multiple and partial correlation; discriminant analysis, principle components and factor analysis; multivariate ANOVA; analysis of covariance; applications using computers. (PR: STA 5326 or CI)

STA 6876 TIME SERIES ANALYSIS (3) Theory and applications of discrete time series models illustrated with forecasting problems. Filtering, forecasting, modeling, and spectral analysis of time series. Control problems. Applications using a computer. (PR: STA 5326 or CI)

MICROBIOLOGY

See also offerings under Biology, Botany and Zoology.

MCB 5206 PUBLIC HEALTH AND PATHOGENIC MICROBIOLOGY (3) A comprehensive survey of pathogenic microbes responsible for disease in man and animals and the impact of these infectious agents on the public health. These pathogens will be studied with respect to their morphology, cultivation, mechanisms of pathogenicity, laboratory diagnosis, and epidemiology. (PR: MCB 3030)

MCB 5265 MEDICAL MYCOLOGY (3) Survey of the yeasts, molds, and actinomycetes most likely to be encountered by the bacteriologist, with special emphasis on the forms pathogenic for man. (PR: MCB 3030)

MCB 5606 SYMBIOLOGY (3) Consideration of mutualistic and parasitic symbioses between microbes and various animal, plant, and microbial hosts from cellular, biochemical, evolutionary, and ecological perspectives. (PR: A course in Microbiology, Cell Biology or Biochemistry, and advanced standing)

MCB 6919 INDEPENDENT STUDY Var. Independent study in which student must have a contract with an instructor. Rpt. S/U. (PR: CI)

MCB 6971 THESIS: MASTER'S Var. Rpt. (PR: CI)

PCB 6236 ADVANCED IMMUNOLOGY (4) Discussion of the basic immune reaction, nature of antigenicity; basic immunological techniques and their use in biological research and the medical sciences. Lec/Lab. (PR: CI)

PHILOSOPHY

Chairperson: J.A. Bell; *Distinguished Research Professors:* K.S. Shrader-Frechette, S.P. Turner; *Professors:* J.P. Anton, J.A. Bell, J.A. Gould, L.L. McAlister, B. Silver, W.H. Truitt, R.C. Weatherford, K. Wiredu; *Associate Professors:* J.B. Waugh, R.N. Taylor; *Courtesy Associate Professor:* M. Myerson; *Courtesy Professor:* D.J. Fasching.

- PHI 6938 SEMINAR IN THE HISTORY OF PHILOSOPHY (3)** A seminar in the history of philosophy. The instructor will determine the subject matter. Variable titles: Ancient, Modern, Recent, Contemporary. Rpt. up to 12 hours. (PR: GS or CI)
- PHI 5135 SYMBOLIC LOGIC (3)** Mathematical treatment of formal logic, including methods of proof, quantification, the logic of relations and an introduction to properties of deductive systems. (PR: PHI 3100 or CI)
- PHI 5225 PHILOSOPHY OF LANGUAGE (3)** An examination of semantical, syntactical, and functional theories of language with special attention given to the problems of meaning, linguistic reference, syntactical form, and the relations between scientific languages and ordinary linguistic usage. Seminar format. (PR: 8 hours of philosophy, major in linguistics, or CI)
- PHI 5913 RESEARCH (1-4)** Individual research supervised by a faculty member. Approval slip from instructor required. (PR: CI)
- PHI 5934 SELECTED TOPICS (1-3)** Selected topics according to the needs of the student. Approval slip from instructor required. (PR:CI)
- PHI 6105 SEMINAR IN LOGIC (3)** Foundations and basic problems of logic. This course may be taken more than once for credit with CI and departmental approval. Seminar format. (PR: GS or CI)
- PHI 6155 MODAL LOGIC (3)** A study of the main systems of Modal Logic together with their metatheory, with considerable attention to the varieties of modality. (PR: PHI 2100 and GS or CI)
- PHI 6305 SEMINAR IN EPISTEMOLOGY (3)** An analysis of recent and contemporary problems of knowledge. This course may be taken more than once for credit with CI and departmental approval. Seminar format. (PR: Major in philosophy or psychology and CI)
- PHI 6405 SEMINAR IN THE PHILOSOPHY OF NATURAL SCIENCE (3)** A study of the nature and status of physical theories, some basic problems associated with scientific methodology, and the philosophical implications of modern science. May be taken more than once for credit with CI and departmental approval. Seminar format. (PR: GS or CI)
- PHI 6425 SEMINAR IN THE PHILOSOPHY OF SOCIAL SCIENCE (3)** Philosophical issues arising in the social sciences; value assumptions, laws and the theories, models, etc. Seminar format. (PR: 8 hours of philosophy or CI)
- PHI 6506 SEMINAR IN METAPHYSICS (3)** In this course students will examine selected topics in classical and contemporary metaphysics, for example, the concept and categories of Being or existence, the existence of God, the problem of universals or general terms, the a priori, the mind-body problem, and the identity thesis.
- PHI 6605 SEMINAR IN ETHICS (3)** Advanced study of the problems of moral philosophy. Rpt. up to 9 hours. (PR: GS and CI)
- PHI 6665 METAETHICS (3)** A study of alternative theories of metaethics including emotivism, moral point of view, supererogate virtue theory. (PR: PHI 3600 or CI)
- PHI 6706 SEMINAR IN THE PHILOSOPHY OF RELIGION (3)** An analysis of fundamental religious concepts in terms of contemporary philosophy. This course may be taken more than once for credit with CI and departmental approval. Seminar format. (PR: GS or CI)
- PHI 6808 SEMINAR IN AESTHETICS (3)** An analysis of fundamental special problems of aesthetics; value, perception, communication, technique, context. This course may be taken more than once for credit with CI and departmental approval. Seminar format. (PR: GS or CI)
- PHI 6908 DIRECTED RESEARCH** Var. Rpt. S/U. (PR: GR. ML)

Arts and Sciences

- PHI 6934 SELECTED TOPICS (1-3)** Selected topics according to the needs of the student. Approval slip from instructor required. (PR: GS and CI)
- PHI 6945 GRADUATE INSTRUCTION METHODS (1-3)** Special course to be used primarily for the training of teaching assistants. Var. Rpt. to a total of 3 credits. S/U.
- PHI 6971 THESIS: MASTER'S** Var. Rpt.
- PHI 7980 DISSERTATION: DOCTORAL** Var. Rpt. (PR: Admission to candidacy)
- PHM 5125 TOPICS IN FEMINIST PHILOSOPHY (3)** A study of recent feminist philosophical approaches to epistemology, aesthetics, or political philosophy.
- PHM 6105 SEMINAR IN SOCIAL PHILOSOPHY (3)** A detailed study of the philosophical theories of society, class societies (Capitalism), advanced technocracy (all types). May be taken more than once for credit with CI and departmental approval. Seminar format. (PR: CI)
- PHM 6305 SEMINAR IN POLITICAL PHILOSOPHY (3)** An examination of the main political philosophies. May be taken more than once for credit with CI and departmental approval. Seminar format. (PR: GS or CI)
- PHM 6406 SEMINAR IN THE PHILOSOPHY OF LAW (3)** A study of the metaphysical, ethical, and epistemological bases of law. May be taken more than once for credit with CI and departmental approval. Seminar format. (PR: GS or CI)
- PHM 6506 SEMINAR IN THE PHILOSOPHY OF HISTORY (3)** The analysis of language and logic of historical explanation, historical idealism, historical materialism, positivism, and historical sociology. May be taken more than once for credit with CI and departmental approval. Seminar format. (PR: GS or CI)
- PHP 6005 PLATO (3)** A systematic study of Plato's dialogues. (PR: GS or CI)
- PHP 6015 ARISTOTLE (3)** A systematic study of Aristotle's philosophy. (PR: GS or CI)

PHYSICS

Chairperson: S. Sundaram; *Professors:* S.C. Bloch, S.R. Deans, N.Djeu, R.W. Flynn, N.C. Halder, L. Jastrzebski, W.D. Jones, D.K. Killinger, J. Lagowski, S. Sundaram; *Professor Emeritus:* Guy Forman; *Associate Professors:* J.L. Aubel, H.R. Brooker, R.S.F. Chang, R.W. Clapp, L. Clarke; *Assistant Professors:* P. Mukherjee, S. Witanachchi; *Lecturer:* D. Spurgin.

- PHY 5624 QUANTUM MECHANICS II (3)** Symmetries, identical particles, scattering, approximation methods, Dirac equation, field quantization. Semester II. (PR: PHY 4604 or CI)
- PHY 5720C ELECTRONICS FOR RESEARCH (4)** A rigorous introduction to the fundamentals of analog and digital electronics. Theoretical circuit analysis and weekly labs introduce practical use of diodes, transistors, analog and digital ICs, breadboarding techniques and electronic test instrumentation. Spring Semester. (PR: CI)
- PHY 5937 SELECTED TOPICS IN PHYSICS (1-4)** Each topic is a course in directed study under the supervision of a faculty member. (PR: Senior or advanced standing and CC)
- PHY 6246 CLASSICAL MECHANICS (3)** Dynamics of particles and systems of particles, Lagrange's equation, central forces, rigid body dynamics. Fall Semester. (PR: PHY 4222 or CI)
- PHY 6346 ELECTROMAGNETIC THEORY I (3)** Electrostatics, magnetostatics, potential and boundary value problems. Maxwell's equations. First semester of sequence PHY 6346, PHY 6347. Semester I. (PR: PHY 4324C or CI)
- PHY 6347 ELECTROMAGNETIC THEORY II (3)** Electromagnetic waves, wave guides and resonant cavities, diffraction, relativistic-particle kinematics and dynamics, plasmas and magnetohydrodynamics. Semester II. (PR: PHY 6346 or CI)

- PHY 6446 LASER PHYSICS AND NONLINEAR OPTICS I (3)** Optical modes, optical resonator theory, gain saturation, theory of laser oscillators, specific laser systems, Q-switching and mode-locking, optical waveguides. (PR: PHY 4324C and PHY 4604 or CI)
- PHY 6447 LASER PHYSICS AND NONLINEAR OPTICS II (3)** Nonlinear optics including optical phase conjugation, second harmonic and sum frequency generation, and stimulated Raman scattering. Selected applications of lasers and nonlinear optics. (PR: PHY 6446 or CI)
- PHY 6536 STATISTICAL MECHANICS (3)** Kinetic theory, configuration and phase space. Boltzmann theorem, Liouville theorem, ensemble theory, quantum statistics. Spring Semester. (PR: PHY 5624 or CI)
- PHY 6846L MODERN LABORATORY TECHNIQUES (3)** Modern laboratory techniques frequently required in experimental research. Includes use of lasers, electronic instruments, vacuum systems, computerized data acquisition, thin film deposition, and semi-conductor Hall experiments. Fall Semester, non-rpt. (PR: GS or CC)
- PHY 6909 INDEPENDENT STUDY (Var.)** Independent study in which student must have a contract with an instructor. Rpt. S/U.
- PHY 6911 DIRECTED RESEARCH (Var.)** (PR: GR, ML.) Rpt. S/U.
- PHY 6935 GRADUATE SEMINAR (1)** All Physics graduate students are expected to enroll in this course Semester I each year. S/U. Semesters: Fall, Spring, Summer.
- PHY 6938 SELECTED TOPICS IN PHYSICS (1-10)** Each topic is a course in directed study under the supervision of a faculty member. (PR: CC)
- PHY 6971 THESIS: MASTER'S (Var.)** Rpt.
- PHZ 5115 METHODS OF THEORETICAL PHYSICS I (3)** Applications of mathematical techniques to classical and modern physics. Vector spaces including Hilbert space, orthogonal functions, generalized functions, Fourier analysis, transform calculus, and variational calculus. Fall Semester. (PR: MAP 4302 or CI)
- PHZ 5116 METHODS OF THEORETICAL PHYSICS II (3)** Applications of mathematical techniques to classical and modern physics. Selected topics in complex analysis, differential and integral equations, numerical methods, and probability theory. Spring Semester. (PR: MAP 4302 or CI)
- PHZ 5304 NUCLEAR PHYSICS (3)** Nuclear forces, nuclear models, nuclear structure, decay, nuclear reactions, and high energy physics. Spring Semester. (PR: PHY 4604 or CI)
- PHZ 5405 SOLID STATE PHYSICS I (3)** Crystal structure, x-ray and electron diffraction, mechanical and thermal properties of solids, electrical and magnetic properties of metals, band theory of metals, insulators, and semiconductors. First semester of sequence PHZ 5405, PHZ 6426. Spring Semester. (PR: PHY 3221, MAP 4302)
- PHZ 5505 PLASMA PHYSICS I (3)** Introduction to Boltzmann, magnetohydrodynamic and orbit approaches to plasmas. Longitudinal and electromagnetic waves in plasmas. Collisions and radiation. Instabilities. Fall Semester. (PR: PHY 4324 or CI)
- PHZ 6136 PHYSICAL APPLICATIONS OF GROUP THEORY (3)** Matrices, symmetry elements and point groups, reducible and irreducible representations, molecular vibrations, selection rules, rotation groups and atomic levels, molecular orbitals and electronic energies, space groups and spectra of crystals, crystal field theory and symmetry. (Offered alternate years.) (PR: CI)
- PHY 6204 ATOMIC AND MOLECULAR SPECTRA I (3)** Hydrogen atom, one electron systems, central field and vector models, perturbations, Zeeman and Stark effect, hyperfine structure, atomic structure calculations; diatomic spectra, rotational and vibrational analysis, intensities, temperatures from spectra, isotope effects. Fall Semester. (PR: PHY 4604 or CI)

PHZ 6205 ATOMIC AND MOLECULAR SPECTRA II (3) Electronic transitions in diatomic molecules, Hund's coupling schemes, electron configuration and valence, astrophysical applications, predissociation, normal modes of polyatomic molecules, Raman and IR spectra, rotation-vibration interaction, microwave spectra, thermodynamic properties, stellar atmospheres. Spring Semester. (PR: PHZ 6204 or CI)

PHZ 6426 SOLID STATE PHYSICS II (3) Optical, electrical and magnetic properties of insulators, superconductivity, imperfections in solids. Second semester of sequence PHZ 5405, PHZ 6426. Fall Sester. (PR: PHZ 5405 or CI)

PHZ 6525 PLASMA PHYSICS II (3) An analytical study of the various types of wave phenomena in plasmas describable by the continuum. (PR: PHZ 5505 or CI)

PHZ 6607 THEORY OF RELATIVITY (3) The special and general theory of relativity, including the gravitational field equations, applications of the special theory, experimental tests of the general theory and various topics of current research interest. (Offered alternate years.) (PR: CI)

POLITICAL SCIENCE

Chairperson: S.A. MacManus; *Professors:* R.A. Factor, S.A. MacManus, F.U. Ohaegbulam, H.E. Vanden; *Associate Professors:* J.E. Benton, M.T. Gibbons, W.E. Hulbary, A.E. Kelley, R. Khator, A.B. Levy, D. Paulson, P.N. Rigos; *Assistant Professors:* M.M. Milani, L. Morehouse; *Other Faculty:* M. Amen, R. Barylski, E. Conteh-Morgan K. Glover, J.E. Jreisat, D.C. Menzel, H. Nelsen, D. Rahm, D. Slider, J.B. Snook.

CPO 5934 SELECTED TOPICS IN COMPARATIVE POLITICS (3) Studies specific substantive areas in Comparative Politics, such as political economy or the politics of specific countries or regions. Rpt. as topics vary.

CPO 6036 POLITICS OF DEVELOPING AREAS (3) Advanced study of ideologies, politics, political institutions, and the socio-economic conditions that influence them in developing nations.

CPO 6091 SEMINAR IN COMPARATIVE POLITICS (3) Extensive examination of the major theories and approaches used in the study of Comparative Politics. Seminar format.

INR 5086 ISSUES IN INTERNATIONAL RELATIONS (3) Explores specific topics and provides the student with an opportunity for indepth study of historical and contemporary problems in international politics. Rpt. as topics vary.

INR 6007 SEMINAR IN INTERNATIONAL RELATIONS (3) Advanced study of international relations, including survey of basic literature, analysis of numerous theoretical and methodological approaches, and analysis of major issues.

INR 6036 SEMINAR IN INTERNATIONAL POLITICAL ECONOMY (3) Advanced study of the development and politics of the international economic system focusing on theoretical and empirical analysis of cooperation and conflict in trade, aid, and investment relationships. (PR: POS 5736 or CI)

INR 6107 AMERICAN FOREIGN POLICY (3) Objectives, formulation, and execution of foreign policy; critical issues and problems confronting the United States. Study of various conceptual, methodological, and theoretical approaches.

POS 5094 ISSUES IN AMERICAN NATIONAL AND STATE GOVERNMENT (3) Selected topics of study in American Government. Rpt. as topics vary.

POS 5155 ISSUES IN URBAN GOVERNMENT AND POLITICS (3) Selected issues and topics in Urban Government and Politics. Rpt. as topics vary.

POS 5736 POLITICAL RESEARCH METHODS (3) A graduate level, introductory survey of empirical research methodology, including statistics and computer data analysis. Topics include measurement, sampling, research design, and selected bivariate analysis techniques. (PR: POS 3713 or equiv.)

- POS 6045 SEMINAR IN AMERICAN GOVERNMENT & POLITICS (3)** Advanced study of selected topics of institutions and processes of American national government and politics.
- POS 6095 SEMINAR IN INTERGOVERNMENTAL RELATIONS (3)** Advanced study of selected topics of institutions, processes, and behavior of American state governments and Florida government. Rpt. as topics vary.
- POS 6127 ISSUES IN STATE GOVERNMENT AND POLITICS (3)** Advanced study of selected topics in institutions, processes, and behavior of American state governments and Florida government. Rpt. as topics vary.
- POS 6157 SEMINAR IN URBAN GOVERNMENT AND POLITICS (3)** Analysis of literature with emphasis on urban political behavior, development of various theories, and propositions regarding governmental structure and the formation and implementation of public policy.
- POS 6247 ISSUES IN POLITICAL BEHAVIOR AND SOCIALIZATION (3)** Advanced study of selected topics in political behavior and socialization, including participation and activism, voting, public opinion, and leadership. Rpt.as topics vary.
- POS 6415 THE AMERICAN PRESIDENCY (3)** Analysis of problems and powers of the presidency with emphasis on crisis management, staffing, legislative leadership, and decision making.
- POS 6427 THE LEGISLATIVE PROCESS (3)** Analysis of formal and informal decision-making processes in legislative bodies, with emphasis on U.S. House of Representatives and U.S. Senate. Executive-legislative conflict and cooperation; input/output analysis.
- POS 6455 POLITICAL PARTIES AND INTEREST GROUPS (3)** Analysis of statutes, functions, and characteristics of political parties and interest groups, as well as their interactions with political processes, actors, and institutions.
- POS 6607 CONSTITUTIONAL LAW (3)** Advanced study of legal, political, philosophic, and methodological problems in constitutional law. (PR: GS or CI)
- POS 6698 SEMINAR IN LAW AND POLITICS (3)** Advanced study of institutions and processes in the field of law and politics. Rpt. as instructor and content vary. (PR: GS)
- POS 6706 SCOPE AND METHODS OF POLITICAL SCIENCE (3)** Introduction to advanced study; the major approaches and methodologies for acquiring political knowledge, intellectual foundations, and applications in various subfields.
- POS 6909 INDEPENDENT STUDY (1-3)** Specialized independent study determined by the student's needs and interests. Needs instructor's consent. S/U. (PR: 3.0 in Political Science)
- POS 6919 DIRECTED RESEARCH** Var. ML. Rpt. S/U. (PR: GR)
- POS 6933 SELECTED TOPICS IN POLITICAL SCIENCE (3)** Selected topics, issues, and problems in political science. Rpt. as topics vary.
- POS 6942 FIELD WORK IN POLITICAL SCIENCE (1-3)** Application of research models now employed in governmental agencies, including development of a structured research proposal. (PR: 3.0 in Political Science and CI)
- POS 6971 THESIS: MASTER'S** Var. Rpt.
- POT 5626 ISSUES IN POLITICAL PHILOSOPHY AND LAW (3)** Selected topics in political philosophy and law. Rpt. as topics vary. (PR: CI)
- POT 6007 SEMINAR IN POLITICAL THEORY (3)** Provides students who are capable of independent work with the opportunity to explore advanced problems of political theory. (PR: GS or CI)

- PUP 5607 PUBLIC POLICY AND HEALTH CARE (3)** The study of health care policy as it relates to the policy process in the American setting.
- PUP 6007 SEMINAR IN PUBLIC POLICY (3)** Examination of public policy from a theoretical and practical decision analysis will be presented in terms of their usefulness in designing policy.
- URP 6056 CITY AND REGIONAL PLANNING (3)** A review of goals, objectives, and interrelationships between regional and city planning; intergovernmental and policy issues. (Also offered under Public Administration.)

PSYCHOLOGY

Chairperson: E.L. Levine; *Distinguished Research Professors:* J.J. Jenkins, C.D. Spielberger; *Professors:* J.M. Anker, W.C. Borman, J.L. Brown, R.L. Fowler, E.L. Gesten, M.S. Goldman, M.W. Hardy, B.N. Kinder, R.C. LaBarba, E.L. Levine, D. McGuinness, H.H. Meyer (Emeritus), C.E. Nelson, D.L. Nelson, L.A. Penner, R.W. Powell, W.A. Russell (Emeritus), J. Sandler, J.B. Sidowski, F. Sistrunk, P.E. Spector, D.E. Stenmark, P.N. Strong; *Associate Professors:* J.A. Becker, M.T. Brannick, J.M. Clingman, M.D. Coovert, M.A. Finkelstein, W.P. Sacco, T.A. Sanocki, J.K. Thompson; *Assistant Professors:* M.C. Carter, C.R. Cimino, P. Martin, V. Phares, S. Schneider-Wright, T. Shimizu; *Other Faculty:* K. Jenkins-Hall, C. McEvoy, W. Strange, G.L. Wood, L. Zheutlin.

- CLP 6166 PSYCHOPATHOLOGY (3)** Exploration of current approaches to the understanding of pathological behavior and implications for theories of personality. A survey of treatment methods is included. (PR: Admission to graduate program in Psychology or CI)
- CLP 6438 PSYCHOLOGICAL ASSESSMENT (3)** Courses cover theory, research, and applications of psychological assessment in areas, such as interviewing, intellectual and cognitive functioning, neuropsychodiagnostics, and personality testing. Rpt. with different subject matter. (PR: CI)
- CLP 6937 TOPICS IN CLINICAL PSYCHOLOGY (1-3)** Courses on topics, such as humanistic psychology, community psychology, and clinical neuropsychology. Rpt. with different subject matter. (PR: CI)
- CLP 7188 PSYCHOTHERAPY AND BEHAVIOR CHANGE (3)** Study of the theoretical, empirical, and applied foundations of the major systems of therapeutic intervention. Rpt. with different subject matter. (PR: CI)
- CLP 7379 GRADUATE SEMINAR IN CLINICAL-COMMUNITY PSYCHOLOGY (1-3)** Seminars on topics, such as psychopathology, community psychology, clinical issues, personality, and developmental psychology. Rpt. with different subject matter. (PR: CI)
- DEP 6058 DEVELOPMENTAL PSYCHOLOGY (2)** Basic survey of research and theory in human development with emphasis on early developmental processes. (PR: Admission to graduate program in Psychology or CI)
- DEP 6136 LANGUAGE DEVELOPMENT (3)** Explores the course of and processes underlying normal language development. Presents data and theory on phonological, semantic, syntactic, and pragmatic development, with emphasis on recent research. (PR: Admission to graduate program in Psychology or Communication Sciences and Disorders or CI)
- EXP 6208 PERCEPTION (3)** Current data and theory of perceptual processes. Consideration of psychological variables in perception, and applications of information theory and signal detection theory. (PR: Admission to graduate program in Psychology or CI)
- EXP 6307 MOTIVATION AND EMOTION (3)** A detailed examination of human motivation and emotion from both the physiological and psychological viewpoints. (PR: CI)
- EXP 6406 LEARNING (2)** Survey of research theories, methods, and results in animal and human classical and instrumental (operant) conditioning. Core requirement for all graduate students in Psychology. (PR: Admission to graduate program in Psychology or CI)

- EXP 6526 HUMAN MEMORY (3)** Review of methods, findings, and theoretical interpretations associated with the acquisition and retention of information. (PR: Admission to graduate program in Psychology or CI)
- EXP 6608 COGNITIVE PSYCHOLOGY (2)** A survey of the research and theory dealing with higher mental processes. Core requirement for all graduate students in Psychology. (PR: Admission to graduate program in Psychology or CI)
- EXP 6930 TOPICS IN EXPERIMENTAL PSYCHOLOGY (3)** Electrophysiological methods and psychophysiology. Rpt. with different subject matter. (PR: CI)
- EXP 7099 GRADUATE SEMINAR IN EXPERIMENTAL PSYCHOLOGY (1-3)** Seminars on topics, such as learning, perception, memory, cognitive processes, and quantitative methods. Rpt. with different subject matter. (PR: CI)
- INP 6056 INDUSTRIAL PSYCHOLOGY (3)** An introduction to the major areas of Industrial-Organizational Psychology, including topics on selection and placement, training, criterion development and performance appraisal, job satisfaction and motivation, and organizational theory and structure. (PR: Admission to graduate program in Psychology or CI)
- INP 6935 TOPICS IN INDUSTRIAL-ORGANIZATIONAL PSYCHOLOGY (3)** Courses on topics such as industrial psychology, evaluation of performance in industry, and human factors. Rpt. with different subject matter. (PR: CI)
- INP 7097 GRADUATE SEMINAR IN INDUSTRIAL-ORGANIZATIONAL PSYCHOLOGY (1-3)** Seminars on topics, such as industrial psychology, evaluation of performance in industry, and human factors. Rpt. with different subject matter. (PR: CI)
- PPE 6058 PERSONALITY (2)** Survey of research and theories of personality, including its relationship to the development of normal and abnormal behavior. (PR: Admission to graduate program in Psychology or CI)
- PSB 6056 PHYSIOLOGICAL PSYCHOLOGY (2)** Introduction to data and research methods in Physiological Psychology. Topics include neurophysiology and neuroanatomy, sensory and motor systems, and internal regulation. Core requirement for all graduate students in Psychology. (PR: Admission to graduate program in Psychology or CI)
- PSY 6056 HISTORY AND SYSTEMS OF PSYCHOLOGY (2)** A review of the history of modern psychology with emphasis on the major systematic approaches that have influenced the current structure of psychology. Persisting polarities and common underlying issues are studied in various historical contexts.
- PSY 6217 RESEARCH METHODS AND MEASUREMENT (4)** Courses in research strategies, design and analysis, and measurement theory in psychological experimentation. Inferential statistics, anova, correlation methods, and interpretation. Rpt. with different subject matter. (PR: CI)
- PSY 6218 GRADUATE RESEARCH METHODS (1-3)** Special course to be used primarily for the training of graduate research assistants. Var. Rpt. to a total of 5 credits. (S/U only.)
- PSY 6907 INDEPENDENT STUDY** Var. Independent study in which student must have a contract with an instructor. Rpt. S/U.
- PSY 6917 DIRECTED RESEARCH** Var. Rpt. S/U. (PR: GR. ML)
- PSY 6946 PRACTICUM AND INTERNSHIP IN CLINICAL PSYCHOLOGY (1-15)** Supervised training in community and university settings in the application of Psychology. Rpt. (PR: CI)
- PSY 6947 GRADUATE INSTRUCTION METHODS (1-3)** Special course to be used primarily for the training of teaching assistants. Var. Rpt. to a total of 5 credits. S/U.
- PSY 6971 THESIS: MASTER'S** Var. Rpt.

- PSY 7780 PROGRAM EVALUATION (3)** CLP 6438, SOP 6669 desirable. An overview of principles and practices of program evaluation, including historical background, purposes and methods, planning and implementation, political context, ethics, and utilization. (PR: PSY 6217 A & B or C)
- PSY 7908 DIRECTED READINGS IN PSYCHOLOGY (1-15)** An advanced reading program of selected topics in Psychology under the supervision of a Psychology faculty member. The reading program is designed to meet the individual requirements and interest of graduate students in Psychology, with selected topics chosen by the student in close collaboration with a faculty member. Rpt. (PR: C)
- PSY 7918 DIRECTED RESEARCH** Var. Rpt. S/U. (PR: GR. Ph.D. level)
- PSY 7931 SEMINAR IN ETHICS AND PROFESSIONAL PROBLEMS (2)** Ethical issues and professional problems in the practice of psychology. (PR: Second year in Ph.D. program in Psychology or C)
- PSY 7980 DISSERTATION: DOCTORAL** Var. (PR: Admission to Candidacy)
- SOP 6059 SOCIAL PSYCHOLOGY (2)** Introduction to theory and research in social psychology. Topics include social cognition, social influence, attitudes, interpersonal interaction, and group behavior. Core requirement for all graduate students in Psychology. (PR: Admission to graduate program in Psychology or C)
- SOP 6669 TOPICS IN SOCIAL-ORGANIZATIONAL PSYCHOLOGY (3)** Courses on topics, such as experimental social psychology, organizational psychology, attitudes, and group process. Rpt. with different subject matter. (PR: C)
- SOP 7609 GRADUATE SEMINAR IN SOCIAL-ORGANIZATIONAL PSYCHOLOGY (1-3)** Seminars on topics, such as social psychology, job stress, and decision making. Rpt. with different subject matter. (PR: C)

PUBLIC ADMINISTRATION

Director: W.J. Pammer, Jr.; *Professors:* J.E. Jreisat, S.A. MacManus, D.C. Menzel; *Associate Professor:* E.J. Benton, R. Khator, W.J. Pammer, Jr., P. Rigos; *Assistant Professors:* J.L. Daly, M.Y. Mongkuko, D. Rahm.

- PAD 5035 ISSUES IN PUBLIC ADMINISTRATION PUBLIC POLICY (3)** Selected issues and topics in Public Administration and Public Policy. Rpt. as topics vary.
- PAD 5333 CONCEPTS AND ISSUES IN PUBLIC PLANNING (3)** Analysis of basic concepts, issues, and strategies of planning, policy determination, collection of information, and decision-making. (PR: URP 4050 or URP 6056)
- PAD 5605 ADMINISTRATIVE LAW (3)** An examination of the constitutional and statutory bases and limitations of the administrative process, administrative adjudication, rule making, and the judicial review of such actions.
- PAD 5612 ADMINISTRATIVE REGULATION (3)** Analysis of the regulatory functions and processes in the American political system: regulatory commissions, their functions, powers, management, reforms, and relationship with other branches of government.
- PAD 5700 RESEARCH METHODS IN PUBLIC ADMINISTRATION (3)** Provides the student with the fundamental skills and knowledge of how research is designed, implemented, analyzed, and utilized in public sector agencies. Available to majors and non-majors.
- PAD 5807 ADMINISTRATION OF URBAN AFFAIRS (3)** Analysis of the role of the administrator at the municipal level, the division of functions, policy formation, alternative governmental structures, effects on the administrative process.
- PAD 5836 COMPARATIVE PUBLIC ADMINISTRATION (3)** How organizations and managers perform within a particular environment, potential impact of innovation, and how service is accomplished in a variety of socio-economic environments.

- PAD 6037 BUREAUCRACY AND PUBLIC POLICY (3)** Analysis of the formal, informal, and societal characteristics of public bureaucracies. A study of the implementation of public policy by bureaucratic agencies.
- PAD 6044 ENVIRONMENT OF PUBLIC ADMINISTRATION (3)** Examination of the legal, political, and ethical environment in which public managers work.
- PAD 6060 PUBLIC ADMINISTRATION THEORY (3)** Examination of major theoretical and practical developments in Public Administration with focus on organization theory and current research trends in the field.
- PAD 6101 PUBLIC ORGANIZATIONS (3)** An indepth study of the nature of public organizations, with emphasis on the structure and process of modern bureaucracy. Topics include comparison of private and public organizations and sources of organizational change.
- PAD 6105 PUBLIC ORGANIZATION CHANGE (3)** Introduction to problems, diagnosis, strategies, and methodology of changing public organizations.
- PAD 6207 PUBLIC FINANCIAL ADMINISTRATION (3)** Examination of the fiscal organization of federal, state, and local governments. Current problems in budgeting, revenue, and indebtedness are considered.
- PAD 6221 PUBLIC BUDGETING (3)** Development, authorization, execution, and assessment of government budgets. Topics include current trends and issues in budget theory and practice, as well as reform efforts.
- PAD 6222 ISSUES IN FLORIDA--BUDGETING AND FINANCE (3)** Selected issues in public financial management and budgeting related to state agencies or local governments in Florida.
- PAD 6307 POLICY ANALYSIS (3)** An introduction to the systematic analysis of public problems, solutions, alternatives, and consequences. The role of the policy analyst/manager is also examined.
- PAD 6312 POLICY DESIGN (3)** The design of public policies and programs, including techniques to assess problems, alternatives, and consequences. Topics include problem analysis, needs assessment, goal setting, cost-effectiveness, and control/monitoring techniques.
- PAD 6327 PUBLIC PROGRAM EVALUATION (3)** Focus on program cycle-planning, development, implementation and evaluation, needs assignment, goal setting, designing alternative program structures, and grant writing.
- PAD 6365 POLICY AND PROGRAM IMPLEMENTATION (3)** The factors and conditions that explain why public policies are implemented in a more or less successful way. Attention is also given to how public managers can be effective implementors.
- PAD 6417 PUBLIC PERSONNEL MANAGEMENT (3)** A study of the major functions in public personnel, including recruiting, selection, testing, training, and development, and employee and human relations in the public service.
- PAD 6427 PUBLIC SECTOR LABOR RELATIONS (3)** A political-legal approach to understanding public sector collective bargaining in the United States. Topics include civil service reform, affirmative action, and equal employment opportunity.
- PAD 6703 QUANTITATIVE AIDS FOR PUBLIC MANAGERS (3)** Survey of techniques and models used in analyzing managerial/policy problems. Topics include microcomputer applications of statistical techniques, cost-benefit analysis, decision theory, linear programming, PERT, and Delphi. (PR: POL 5734, SOC 6526, or CI)
- PAD 6710 COMPUTER APPLICATIONS IN PUBLIC ADMINISTRATION (3)** Introduction to computers and information management systems in public sector organizations. Topics include microcomputers, data management, structured systems analysis, algorithm development, data base design concepts, and design support systems.

- PAD 6907 INDEPENDENT STUDY (1-3)** A flexible format for conceptual or theoretical studies in public administration. Rpt. to 4 hours. S/U. (PR: CI)
- PAD 6909 PROBLEM REPORT (3)** Analysis of a significant administrative or policy problem facing a public agency or manager. Majors only.
- PAD 6915 DIRECTED RESEARCH (1-3)** A flexible format for structured field research in Public Administration. Rpt. up to 6 hours. S/U. (PR: CI)
- PAD 6926 GRADUATE COLLOQUIUM (1)** Variable topics in public affairs and administration using guest lecturers and student-practitioner-faculty panels. Rpt. as topics vary. S/U.
- PAD 6934 SELECTED TOPICS IN PUBLIC ADMINISTRATION (1-4)** A flexible format to offer specialized courses not available within the regular curriculum. Rpt. as topics vary.
- PAD 6935 ADVANCED STUDY IN PUBLIC ADMINISTRATION (3)** A variable topics course intended for doctoral level students in related fields and master's level students who wish to pursue a Ph.D. in Public Administration. Rpt. as topics vary. (PR: Doctoral level standing or 6 credits in PAD)
- PAD 6946 INTERNSHIP IN PUBLIC ADMINISTRATION (4-6)** Structured learning and work experience in a public agency or non-profit organization. Majors only. Rpt. to 6 hours. S/U (PR: CI)
- URP 6056 CITY AND REGIONAL PLANNING (3)** A review of goals, objectives, and interrelationships between regional and city planning; intergovernmental and policy issues. Cross-listed with Political Science.

REHABILITATION COUNSELING

Chairperson: J.D. Rasch; *Distinguished Research Professor:* W.G. Emener; *Professors:* J.F. Dickman, J.D. Rasch; *Associate Professors:* P. Gross, M.J. Landsman, C.M. Pinkard, T.J. Wright.

- EGC 5065 FOUNDATIONS AND ETHICS (4)** An overview of rehabilitation history and introduction to rehabilitation processes and ethical issues in the public and private sectors. Ethical, legal, and professional standards in mental health and rehabilitation counseling are emphasized.
- EGC 5376 MEDICAL ASPECTS OF DISABILITY (4)** A survey of medical conditions and disabilities encountered by rehabilitation and mental health counselors. Examines the relationship of client handicaps, physical and mental, to rehabilitation and mental health programming. (PR: EGC 5065 or CI)
- EGC 5493 SEMINAR I: HUMAN DEVELOPMENT THEORY IN COUNSELING (3)** Human development theory as applied in psychotherapy and case management in mental health, addictions, and other rehabilitation settings. Must be taken concurrently with EGC 5850. S/U. (PR: EGC 5065, EGC 5725, or CI)
- EGC 5496 THEORETICAL ISSUES IN APPLIED ALCOHOL ABUSE IN REHABILITATION COUNSELING (4)** An information approach to alcohol abuse. Explores the extent and rate of abuse in the United States, causes, biology, psychosocial aspects, legal aspects, and treatment of alcoholism. (PR: CI)
- EGC 5725 INTERPERSONAL COUNSELING I: PERSONALITY THEORY (4)** Focuses on the utilization of one's self in rehabilitation and mental health counseling relationships. Emphasis on the experiential exploration and development of interpersonal skills within the context of personality theories. (PR: CI)
- EGC 5850 PRACTICUM I (1)** Supervised experience and participation in counseling in a variety of rehabilitation settings for a minimum of 120 hours. Must be taken concurrently with EGC 5493. S/U. (PR: EGC 5065, EGC 5725, or CI)

- EGC 5905 DIRECTED STUDIES (1-4)** Supervised rehabilitation studies relevant to student's professional development. Rpt. to 8 hours. (PR: CI)
- EGC 6205 INDIVIDUAL EVALUATION AND ASSESSMENT (4)** Examines assessment procedures utilized in rehabilitation and mental health counseling settings and critical issues in the evaluation of people who are mentally and physically disabled. (PR: EGC 5065 or CI)
- EGC 6374 VOCATIONAL EVALUATION AND ADJUSTMENT SERVICES OF HANDICAPPED AND DISADVANTAGED PEOPLE (4)** An introduction to various systems of vocational evaluation including samples, situation assessment, and on-the-job evaluation. Includes adjustment services. (PR: EGC 5065 or CI)
- EGC 6375 PLACEMENT METHODS AND PROCESSES (4)** Examination of placement methods and processes with handicapped individuals. Includes a survey of work requirements in different occupations and how these relate to specific functional limitations. (PR: EGC 5065 or CI)
- EGC 6468 PSYCHOSOCIAL AND SEXUAL ASPECTS OF DISABILITY (4)** Psychosocial aspects of physical and mental disabilities in contemporary American society. Special emphasis on sexuality counseling for individuals with physical and mental disabilities. (PR: EGC 5065 or CI)
- EGC 6470 PRACTICUM IN APPLIED ALCOHOL ABUSE IN REHABILITATION COUNSELING (4)** An extension of EGC 5496 with an emphasis on field work in alcoholism treatment. (PR: EGC 5496 and CI)
- EGC 6494 SEMINAR II: PSYCHOPATHOLOGY FOR MENTAL HEALTH AND REHABILITATION COUNSELORS (3)** Psychopathology as applied in psychotherapy and case management in mental health, addictions, and other rehabilitation settings. Must be taken concurrently with EGC 6851. S/U. (PR: EGC 5493 or CI)
- EGC 6497 THEORETICAL AND EXPERIENTIAL APPROACHES TO COUNSELING THE ALCOHOL ABUSER (4)** An extension of EGC 5496 with emphasis on experiential approaches to counseling the alcohol abuser. (PR: EGC 5496 and CI)
- EGC 6566 THEORY AND PRACTICE IN GROUP WORK (4)** Theoretical and empirical issues of group process are examined in the context of an ongoing group. Emphasis is on application to rehabilitation and mental health counseling. (PR: CI)
- EGC 6727 INTERPERSONAL COUNSELING II: COUNSELING THEORY (4)** An extension and intensification of rehabilitation and mental health counseling skills developed in EGC 5725. Emphasis is on the experiential exploration and development of interpersonal skills within the context of counseling theory. (PR: EGC 5065, EGC 5725, or CI)
- EGC 6767 RESEARCH IN REHABILITATION (4)** The evaluation and utilization of available research studies and the development of research skills. An individual research project is required. (PR: EGC 5065 or CI)
- EGC 6851 PRACTICUM II (1)** A continuation of the supervised experience and participation in counseling begun in EGC 5850 for an additional 120 hours. Must be taken concurrently with EGC 6494. S/U. (PR: EGC 5065, EGC 5850, or CI)
- EGC 6885 INTERNSHIP IN REHABILITATION (4)** Student placement in an approved intern setting for a minimum of 480 hours of supervised experience. S/U. (PR: Completion of all core courses or CI)
- EGC 6906 INDEPENDENT STUDY** Var. Independent study in which student must have a contract with an instructor. Rpt. S/U.
- EGC 6915 DIRECTED RESEARCH** Var. Rpt. S/U. (PR: GR, ML)
- EGC 6934 SEMINAR IN REHABILITATION COUNSELING (1-4)** Selected issues and problems in rehabilitation counseling with subject and scope to be determined by instructor. Rpt. with different content. (PR: CI)

EGC 6971 THESIS: MASTER'S Var. Rpt.

RELIGIOUS STUDIES

Chairperson: J.F. Strange; *Distinguished Research Professor:* J. Neusner; *Professors:* D.J. Fasching, D. Jorgensen, N. Katz, J.F. Strange, W.C. Tremmel; *Associate Professors:* S. Mandell, M.G. Mitchell.

REL 6035 PROSEMINAR: THE GRADUATE STUDY OF RELIGION (3) An introduction to and research methods used in Religious Studies proper and those borrowed from other disciplines. In the former are to be found comparative religion, religious hermeneutics, and theological analysis. Among the latter are included comparative literature, literary criticism, and historiography. (PR: GS in the Department of Religious Studies)

REL 6126 RELIGION IN AMERICA (3) Studies in the history of native American religions, of the rise of American denominations, churches, and sects, of the relationship between church and state, and religious thought in America. Rpt. with different subject matter twice. Open to non-majors.

REL 6175 RELIGION, ETHICS AND PUBLIC POLICY (3) This tutorial will explore the relation between religion, ethics, the social sciences, and social policy. Problems of ideological conflict and ethical relativism will be examined, as well as possible religious and theoretical foundations for a normative ethics of social change.

REL 6196 RELIGION AND MODERNIZATION (3) This course will explore the unique characteristics of modern civilization, with special attention given to the secularizing effects of modern science, technology, economics, and politics on the world's religions and their various responses to these factors.

REL 6248 STUDIES IN THE GOSPELS (3) An examination in detail of a select problem in Gospel research such as the Synoptic Problem, the social world of earliest Palestinian Christianity as inferred from the documents, life of Jesus research, or structural criticism of gospel narrative. Rpt. with different subject matter twice.

REL 6285 STUDIES IN BIBLICAL ARCHAEOLOGY (3) A study of various problems in Biblical Archaeology including excavation techniques, principles of interpretation, problems in correlation of the text of the Bible and specific finds, chronology, reconstruction of culture from archaeological evidence, and others.

REL 6325 RELIGION AND CULTURE OF THE WEST (3) Examines some of the most important religious literature of the Western World – Jewish, Christian, and Islamic – attempting to understand each classical expression within its own historical and cultural context.

REL 6327 SEMINAR: ANCIENT RELIGIONS AND LITERATURES (3) A research seminar in some aspect of ancient religion and literature: Hebrew Bible, New Testament, Mithraism, Mystic Religions, Pseudepigrapha, and others taught in translation. Rpt. with different subject matter three times.

REL 6346 SEMINAR: BUDDHISM (3) Open to non-majors. The seminar in Buddhism explores the history of Buddhism and/or of Buddhist texts and/or Buddhist religious thought. (PR: Var. REL 4343)

REL 6347 BUDDHISM AND POLITICS IN CONTEMPORARY ASIA (3) Attention will be paid to Buddhist scriptures to discern the religion's inherent social concerns, followed by detailed analyses of methodological controversies surrounding Buddhism's interactions with society. Case studies of Sri Lanka, Thailand, Burma, Tibet and Japan will conclude class deliberations. (Prerequisite or concurrent enrollment in REL 6346.)

REL 6447 LIBERATION THEOLOGY (3) A critical examination of Third World, Black American, and Feminist Liberation Theologies of the Christian tradition.

REL 6617 THE HISTORY OF JUDAISM: THE FORMATIVE AGE (3) The history of how the Judaism that predominated from the first century to the present took shape in the first six centuries AD. (PR: REL 3602)

- REL 6906 INDEPENDENT STUDY (1-3)** Independent study in which the student must have a contract with the instructor. (PR: GS, ML)
- REL 6911 DIRECTED RESEARCH (1-3)** Individual guidance in concentrated reading in a carefully delimited area of religious studies research skills. Rpt. Majors only. (PR: GS, ML)
- REL 6921 COLLOQUIUM (1)** The departmental colloquium is held at least three times each semester in order to bring all religious studies faculty and graduate students together to discuss the research of a particular student, faculty member, or guest scholar. Rpt. up to 6 hours. S/U.
- REL 6938 SPECIAL TOPICS IN RELIGIOUS STUDIES (2-4)** Open to non-majors. Variable titles offered on topics of special interest. Rpt. with different subject matter twice. (PR: GS)
- REL 6940 GRADUATE INSTRUCTION METHODS (1-4)** Offered primarily for the supervision of Graduate Teaching Assistants. Var. S/U.
- REL 6971 THESIS: MASTER'S** Var. Rpt. (PR: GR, ML)

SOCIAL WORK

Director: B.L. Yegidis; *Professors:* T.J. Northcutt, Jr., B.L. Yegidis; *Associate Professors:* J.A. Giordano, T.U. Hancock, W.S. Hutchison, Jr., P.R. Newcomb, A.A. Smith, P.L. Smith, R.J. Wilk; *Assistant Professors:* P.A. d'Oronzio, C.S. Roberts, A.L. Strozier; *Courtesy Faculty:* *Professor:* J.L. Kosberg, W. Vasey; *Associate Professor:* M.L. Coulter.

- SOW 5930 SELECTED TOPICS IN SOCIAL WORK (1-4)** Restricted to Social Work majors, both graduate and undergraduate; other by School permission. Course is taken as an elective. Various title course will selectively expand specific social work content areas.
- SOW 6105 FOUNDATIONS IN HUMAN BEHAVIOR (3)** Introduces a systems perspective on understanding the relationships inherent in human growth and development. Special emphasis is placed on issues involving minorities, women, the disabled, various family forms, and sexual preference. (PR: CC)
- SOW 6114 INDIVIDUAL GROWTH AND DEVELOPMENT THEORY (2)** This course presents various theoretical perspectives in individual growth and development commonly used in clinical practice with individuals, families, and groups. Ethnic, cultural, and lifestyle differences in normative development will be addressed, as will the influence of poverty, resource deprivation, sexual stereotyping, and illness/disability on social functioning. (PR: CC)
- SOW 6120 THEORETICAL PERSPECTIVES ON PHYSICAL AND MENTAL DYSFUNCTIONING (5)** Addresses the spectrum of psychosocial responses to disease, injury, developmental disabilities and stress of both acute and chronic nature; identifies major forms of psychopathology with focus on etiology, typical response patterns, and treatment implications. (PR: CC)
- SOW 6126 DYNAMICS OF DYSFUNCTIONING IN CHILDREN AND YOUTH (2)** Study of specific disease, injury, and stress states; etiology and typical response patterns. Parallels dysfunctional states addressed concurrently in treatment course. (PR: CC)
- SOW 6129 DYNAMICS OF DYSFUNCTIONING IN THE ADULT AND ELDERLY (2)** Study of specific dysfunctional states; etiology and typical response patterns. Parallels dysfunctional states addressed concurrently in treatment course. (PR: CC)
- SOW 6234 FOUNDATIONS OF SOCIAL WELFARE POLICY (3)** Examines historical antecedents of social welfare as an institution and current state of social welfare programs in America. Emphasis is placed on understanding social, economic, and political forces that shape policies and programs. (PR: CC)
- SOW 6236 SOCIAL WELFARE POLICY ANALYSIS AND DESIGN (3)** Presents various methods of policy analysis with emphasis on distinctions among legislative, administrative, and judicial policy. Examines roles and responsibilities of the professional practitioner in the policy process. (PR: CC)

- SOW 6342 INDIVIDUAL, FAMILY AND GROUP TREATMENT I (3)** Application of clinical practice to work with individuals. Psychosocial model is emphasized. Professional laboratory develops skills in practice. (PR: CC)
- SOW 6346 FUNDAMENTALS OF SOCIAL WORK PRACTICE (3)** Describes full range of social work interventions, from micro to macro. Historical development of practice methods and survey of current techniques. (PR: CC)
- SOW 6348 THEORIES OF CLINICAL PRACTICE (2)** Theories for clinical practice, with emphasis on the psychosocial model. Explores basic skills for clinical practice. (PR: CC)
- SOW 6356 TREATMENT METHODS WITH CHILDREN AND YOUTH (2)** Differential psychosocial treatment related to various dysfunctional states with children and youth. Parallels dysfunctional states addressed in concurrent behavior course. (PR: CC)
- SOW 6359 TREATMENT METHODS WITH ADULTS AND THE ELDERLY (2)** Differential psychosocial treatment related to various dysfunctional states encountered with adults and the elderly. Parallels dysfunctional states addressed in concurrent behavior course. (PR: CC)
- SOW 6362 INDIVIDUAL, FAMILY AND GROUP TREATMENT III (3)** Emphasizes selection of techniques in the psychosocial model of treatment. Primary focus on family, couple, and parent-child problems. (PR: CC)
- SOW 6368 INDIVIDUAL, FAMILY AND GROUP TREATMENT II (3)** Focus on psychosocial model of group treatment. Comparison with individual and family modality. (PR: CC)
- SOW 6375 MACRO PRACTICE SEMINAR (3)** Studies facets of organizational environment in which clinical practice takes place; develops skills in various macro practice functions of the agency, such as supervision, program operations, and interagency relations. (PR: CC, SOW 6435, SOW 6368, SOW 6535)
- SOW 6405 FOUNDATIONS OF SOCIAL WORK RESEARCH AND STATISTICS (3)** This is the first of four research methods courses intended to introduce students to the various methods, designs, measurements, and statistical techniques in social work research.
- SOW 6433 CLINICAL RESEARCH (2)** This is the second in a series of four required research courses. It focuses on the design and implementation of evaluation studies in social work.
- SOW 6435 FIELD RESEARCH I (1)** This is the third in a series of four research courses. It provides the structure for supervision of graduate research projects.
- SOW 6436 FIELD RESEARCH II (1)** This is the fourth and final research course. It provides the mechanism for supervision of the graduate research project.
- SOW 6534 FIELD INSTRUCTION I (4)** Supervised field instruction in a social service agency, consisting of 20 hours per week, plus a 2-hour practice seminar. S/U. (PR: CC)
- SOW 6535 FIELD INSTRUCTION II (6)** Supervised field instruction in a social service agency, consisting of 32 hours per week, plus a 2-hour practice seminar. S/U. (PR: CC)
- SOW 6536 FIELD INSTRUCTION III (4)** Supervised field instruction in a social service agency, consisting of 20 hours per week, plus a 2-hour practice seminar. S/U. (PR: CC)
- SOW 6900 DIRECTED READINGS (1-3)** A reading program in selected topics under supervision of a faculty member. A formal contract must be approved by School Director. (PR: Admission to MSW program)
- SOW 6931 SELECTED TOPICS IN SOCIAL WORK (1-4)** Restricted to MSW students; others by School permission.

SOCIOLOGY

Chairperson: D.A. Harper; *Professors:* R.G. Francis, D.A. Harper, E.G. Nesman, S. Stamps, R.H. Wheeler; *Associate Professors:* G.A. Brandmeyer, C.S. Ellis, B.G. Gunter, R.A. Hansen, M.B. Kleiman, H.A. Moore, M. Orru; *Assistant Professors:* J. Friedman, L. Graham, L.W. Kutcher.

- SYA 6126 CONTEMPORARY SOCIOLOGICAL THEORY (3)** Emphasizes logical and conceptual dimensions of theory and theory construction. (PR: Undergraduate course in sociological theory or CI)
- SYA 6145 TRADITION, CUSTOM, AND MORALS (3)** An examination of the place of tradition, custom, and morals in social life, with special attention to politics, work, social structure, and the problems of the reproduction of social relations. (PR: GS)
- SYA 6175 THEORIES IN COMPARATIVE HISTORICAL SOCIOLOGY (3)** An introduction to theoretical ideas and classic texts in comparative historical sociology and closely related areas of discourse.
- SYA 6305 METHODS OF RESEARCH (3)** Logic and practice of research; problems of observation and data collection, data processing, and evaluation. (PR: Course in social investigation or CI)
- SYA 6315 QUALITATIVE RESEARCH METHODS (3)** Designed to introduce students to qualitative research methods, such as participant observation and intensive interviewing that require the researcher to get close to the social situation of interest. (PR: Undergraduate course in methods or CI)
- SYA 6348 SURVEY RESEARCH I (3)** The design and execution of a community social survey project. It is anticipated that the student will enroll in SYA 6349 (Survey Research II) the following semester to participate in analyzing the data collected in SYA 6348. (S/U only.)
- SYA 6349 SURVEY RESEARCH II (3)** Analysis of data and writing a research report using data collected in the course in Survey Research I. It is normally expected that the student will have taken SYA 6348 the previous term. S/U.
- SYA 6405 SOCIOLOGICAL STATISTICS (3)** Logic and application of parametric and nonparametric statistical analysis for sociological data. (PR: STA 3122 or CI)
- SYA 6475 COMMUNITY ANALYSIS (3)** Theories of community and community organization. Methods of community study; problems of urban areas. (PR: Course in urban sociology or CI)
- SYA 6505 THE COMMUNICATION OF SOCIOLOGY (3)** Designed to help student define and formalize more effective efforts at communicating sociology. Majors only.
- SYA 6909 INDEPENDENT STUDY** Var. Independent study in which student must have a contract with an instructor. Rpt. S/U.
- SYA 6912 DIRECTED RESEARCH** Var. Rpt. S/U. (PR: GR. ML)
- SYA 6933 SPECIAL TOPICS-SOCIOLOGY (3)** Content varies according to interests of students and instructor. Rpt. (PR: CI)
- SYA 6971 THESIS: MASTER'S** Var. Rpt.
- SYO 6125 FAMILY ANALYSIS (3)** Theory of interpersonal relations and interaction in the modern family. Analysis of functions and roles. (PR: Course in family or CI)
- SYO 6406 SOCIOLOGY OF HEALTH AND ILLNESS (3)** Survey of core concepts and current research in the sociology of health and illness: social correlates of disease, health care utilization, physician-patient relations, medical compliance, and illness behavior. (PR: GS)
- SYO 6545 COMPLEX ORGANIZATIONS (3)** Organizational theory, bureaucratic models, authority, power legitimation, and types of formal organization. (PR: Course in social organizations or CI)

Arts and Sciences

- SYP 5055 SYMBOLIC INTERACTION** (3) Interpersonal influence, complex behavior, role, conflict, and social situational factors. (PR: 3000 or CI; upper division standing)
- SYP 6005 SOCIAL PSYCHOLOGY SEMINAR** (3) Stresses contemporary developments in social psychological theory and empirical research. (PR: Course in social psychology or CI)
- SYP 6575 DEVIANCE AND CONTROL** (3) Theories of control and deviance, with research application of problem areas. (PR: Course in criminology of juvenile delinquency or CI)

WOMEN'S STUDIES

Chairperson: J.B. Snook; *Professors:* L. L. McAlister, J. Ochshorn; *Associate Professors:* M. Myerson, J.B. Snook; *Assistant Professors:* J.E. Borchert, G. Grewal, K.M. Vaz; *Courtesy Appointments:* R. Baner, N. Norvell, L. Whiteford.

- PHM 5125 TOPICS IN FEMINIST PHILOSOPHY** (3) Study of recent feminist philosophical approaches to epistemology, aesthetics, or political philosophy. (May be taken for credit in Philosophy.)
- WST 5001 FEMINIST RESEARCH AND METHODOLOGY** (3) To develop a more comprehensive understanding of the situation of women in society and to develop a theoretical basis for integrating this knowledge into the student's graduate course of study. Available to non-majors; may not be repeated.
- WST 5266 WOMEN OF COLOR: ACTIVISM AND SOCIAL CHANGE** (3) Intensive reading and discussion of the participation of women of color in contemporary revolutionary and reformist activities.
- WST 5934 SELECTED TOPICS** (1-4) Study of current research methods and scholarship on women from a multi-disciplinary perspective. Rpt. as topics vary. (CI)
- WST 6900 DIRECTED READINGS** (1-3) Supervised program of intensive readings of an interdisciplinary nature focusing on women. Student must have contract with instructor. Rpt. (PR: CI)
- WST 6910 DIRECTED RESEARCH** (Var.) S/U Provide graduate students with research experience in areas of specific interest utilizing feminist perspectives and research methods. Rpt. up to 6 hrs. (PR: CC and signed contract)

ZOOLOGY

See also offerings under Biology, Botany and Microbiology.

- ENY 5505 AQUATIC ENTOMOLOGY** (3) Taxonomy, development, and ecology of aquatic insects with emphasis on local forms. Lec/Lab. (PR: ENY 3004 or CI)
- PCB 5306C LIMNOLOGY** (4) An introduction to the physical, chemical, and biological nature of fresh water environments. Lec/Lab. (PR: CI)
- PCB 6376C PHYSIOLOGICAL ECOLOGY** (4) Effect of environmental factors on animal function at the cellular and organ system level with emphasis on control and mechanism. Lec/Lab. (PR: CI)
- ZOO 5235C PARASITOLOGY** (4) Fundamentals of animal parasitology and parasitism, the biology of selected animal parasites, including those of major importance to man. Lec/Lab. (PR: One year major in Biology)
- ZOO 5425C HERPETOLOGY** (4) Major aspects of amphibian and reptilian biology emphasizing fossil history, evolutionary morphology, sensory physiology, life history, and reproductive behavior. Lec/Lab. Field trip. (PR: ZOO 3713C, CI)
- ZOO 5456C ICHTHYOLOGY** (4) Evolution, systematics, structure, behavior, physiology, and ecology of fishes. (PR: Senior or GS; BSC 2010, BSC 2011, ZOO 3713C. PCB 4674 is suggested.)

- ZOO 5475C ORNITHOLOGY** (4) The biology of birds. Field trips emphasize local avifauna. Lec/Lab. (PR: One year major in Biology)
- ZOO 5555C MARINE ANIMAL ECOLOGY** (4) Study of energy, flow, biogeochemical cycles, and community structure in marine environments. Lec/Lab. (PR: PCB 4043C and ZOO 3203C)
- ZOO 6907 INDEPENDENT STUDY** Var. Independent study in which student must have a contract with an instructor. Rpt. S/U. (PR: CI)
- ZOO 6971 THESIS: MASTER'S** Var. Rpt. (PR: CI)

College Of Business Administration

ACCOUNTING/LAW

Director: G.L. Holstrum; *Professors:* D.M. Dennis, C.W. Dungan, J.R. Fellows, K.L. Hooks, R.M. Keith, G.H. Lander, C.J. O'Neil, J.L. Smith, W.L. Stephens, R.J. West; *Associate Professors:* L.M. Alberto, J.F. Bussman, T.J. Engle, L.C. Harris, G. Laursen, J.R. Martin, J.E. Moon, W.H. Parrott, J.D. Siebel.

- ACG 5935 SELECTED TOPICS IN ACCOUNTING** (1-3) To allow advanced undergraduate students and graduate students to research and study contemporary and emerging topics in the field. Rpt. to 6 hours. (PR: CI)
- ACG 6025 FINANCIAL ACCOUNTING FOR MANAGERS** (3) Study of (1) accounting concepts and standards applicable to presentation of financial information to interested users, (2) structure, uses and limitations of financial statements and (3) measurement systems related to income determination and asset valuation. Discussion of internal and external influences on accounting decisions. Not available for credit for graduate students in the Master of Accountancy program.
- ACG 6075 MANAGEMENT ACCOUNTING AND CONTROL** (3) The relevancy and limitation of cost information in: (1) planning and controlling current operations; (2) special decisions and long-range planning; (3) inventory valuation and income determination. Not available for credit for graduate students in the Master of Accountancy program. (PR: ACG 6025)
- ACG 6346 MANAGEMENT ACCOUNTING AND CONTROL** (3) Measurement, interpretation, planning, and control of costs by means of predetermined standards, and variance analysis. Use of accounting and statistical information in preparing budgets and controlling operations. (PR: 20 hours of accounting or CI)
- ACG 6405 SYSTEMS THEORY AND QUANTITATIVE APPLICATIONS** (3) The design and operation of contemporary accounting systems including the relevance of data processing and statistical methods to the system of financial information and control. (PR: ACG 3401 or equiv.)
- ACG 6636 CONTEMPORARY ISSUES IN AUDITING** (3) This course involves a critical analysis of a number of current issues in auditing including: independence, theory of evidence, reporting, quality control, and public oversight of the profession. (PR: ACG 4632)
- ACG 6875 DEVELOPMENT OF ACCOUNTING THOUGHT** (3) A study and evaluation of the development and evolution of current accounting theory and measurement concepts. The definition of accounting objectives and goals and the development of measurement models. (PR: 20 hours of accounting or CI)
- ACG 6905 INDEPENDENT STUDY** Var. Independent Study. Student must have a contract with an instructor. Rpt. S/U.
- ACG 6915 DIRECTED RESEARCH** Var. Rpt. S/U. (PR: GR, M.L)
- ACG 6936 SELECTED TOPICS IN ACCOUNTING** (1-4) The course content will depend on student demand and instructor's interest. Rpt. up to 6 hours. (PR: CC)

- ACG 7156 SEMINAR IN FINANCIAL ACCOUNTING (3)** This course investigates advanced research and methodological issues in financial accounting. It focuses primarily on research which uses financial information in contexts external to the firm. (PR: ACG 6875 or CI)
- ACG 7356 SEMINAR IN MANAGEMENT ACCOUNTING (3)** Review and critical analysis of management accounting foundation with emphasis on the current research methods in organizational behavior aspects and multiple criteria decision methods. (PR: ACG 6346 or CI)
- ACG 7415 SEMINAR IN ACCOUNTING INFORMATION SYSTEMS (3)** Review and critical analysis of major topics and research methods in accounting information systems. (PR: ACG 6405 or CI)
- ACG 7646 SEMINAR IN AUDITING (3)** This course involves a study of state-of-the-art research techniques as applied to major auditing issues and a critical analysis of the reported research findings. (PR: ACG 6636 or equiv. or CI)
- ACG 7876 HISTORICAL DEVELOPMENT OF ACCOUNTING THOUGHT (3)** Historical development of accounting thought and practice. (PR: CI)
- ACG 7936 SEMINAR ON SPECIAL TOPICS IN ACCOUNTING (3)** Coverage of particular topics of interest to doctoral faculty and students during any given semester. (PR: CI)
- ACG 7980 DISSERTATION IN ACCOUNTING (1-21)** Research and writing of a dissertation on an accounting topic. (PR: Completion of comprehensive exams and CI)
- TAX 6065 FEDERAL TAX RESEARCH, PLANNING, PROCEDURE (3)** A study of the development of tax law and its implication in business decisions. Tax research, tax planning and tax procedure are emphasized, along with relevant computer applications. (PR: TAX 4001, TAX 4015)
- TAX 6105 ADVANCED CORPORATE TAXATION (3)** A study of advanced income tax problems involving corporations, including organization, operation, distribution, and liquidation. Topics include "S" Corporations, collapsible corporations, personal holding companies, accumulation of earnings, and acquisition and disposition of corporations. The planning and business aspects of corporate transactions are emphasized. (PR: TAX 4001, TAX 4015)
- TAX 6205 ADVANCED PARTNERSHIP TAXATION (3)** A study of advanced income tax problems involving partnerships, including organization, operation, distributions, liquidations, basis, family partnerships, and sales and exchanges. The planning and business aspects of partnerships are emphasized. (PR: TAX 4001, TAX 4015)
- TAX 6405 TAXATION OF TRUSTS AND ESTATES (3)** A study of income tax problems involving trusts and estates and beneficiaries, including simple and complex trusts, distributable net income, and grantor trusts. Planning and business aspects of trusts and estates are emphasized. (PR: TAX 4001)
- TAX 6445 ESTATE PLANNING (3)** A study of the income, estate, and gift tax problems involving estate planning, including a study of tax and non-tax motivations, estate analysis, probate, wills, revocable trusts, irrevocable trusts, concurrent ownership, and the marital deduction. Practical applications include case studies involving will and trust drafting and the hands-on use of a computer estate planning software package. (PR: TAX 4001, TAX 4015)
- TAX 6505 U.S. TAXATION OF FOREIGN ENTITIES (3)** A study of the income taxation of foreign entities investing or doing business in the United States, with emphasis on tax planning. (PR: TAX 4001, TAX 4015)
- TAX 7067 SEMINAR IN TAXATION (3)** An introduction to current trends in academic tax research and the various methodologies being used in such research. (PR: TAX 6065 or CI)

ECONOMICS

Chairperson: J.W. Rowe, Jr.; *Professors:* D. Bellante, G. Brunhild, T.D. Curtis, H.S. Dye, J.S. DeSalvo, W.J. Herman, J.W. Rowe, Jr., E.W. Shows; *Associate Professors:* J.P. Cooke, E.J. Ford, C.A. Green, E.A. Hanni, M.G. Herander, P. Porter, J.G. Spence, C.R. Thomas, R.M. Wilson

- ECO 6115 MICROECONOMICS** (3) Microeconomic behavior of consumers, producers, and resource suppliers, price determination in output and factor markets, general market equilibrium. (PR: ECO 3101 or GEB 6716, ECO 4401 or CC)
- ECO 6205 MACROECONOMIC THEORY AND POLICY** (3) Determination of income, employment, wages, prices, and interest rates, contemporary policy issues, long-run economic growth. (PR: For Master of Accountancy students only)
- ECO 6206 AGGREGATE ECONOMICS** (3) Advanced macroeconomic analysis of income, employment, prices, interest rates and economic growth rates. (PR: ECO 3203 or GEB 6717)
- ECO 6216 MONETARY THEORY** (3) Impact of the financial sector on real and nominal economic magnitudes. (PR: ECO 3203 or GEB 6717)
- ECO 6305 HISTORY OF ECONOMIC THOUGHT** (3) Currents of modern economic thought in the last hundred years. (PR: ECO 3101 or GEB 6716 or CI)
- ECO 6424 ECONOMETRICS I** (3) Theory and use of multiple regression to estimate relations in causal models, use of standard software packages. (PR: ECO 3203 or GEB 6717, QMB 3200, QMB 6305, or CI)
- ECO 6425 ECONOMETRICS II** (3) Advanced econometric techniques; model building, estimation and forecasting; design and execution of research projects. (PR: ECO 6424)
- ECO 6433 APPLIED FORECASTING** (3) Time series and cross sectional data for managerial control forecasting, index numbers, leading economic indicators, econometric studies, linear forecasts. (PR: QMB 6305)
- ECO 6505 PUBLIC FINANCE** (3) Effects of tax and expenditure policies on resource allocation and income distribution. (PR: ECO 3101 or GEB 6716)
- ECO 6525 PUBLIC SECTOR ECONOMICS** (3) Introduction to the price system and the allocation of resources, emphasis on market failure and the economic role of government. (No credit for Economics or Business Administration students.)
- ECO 6706 INTERNATIONAL TRADE: THEORY AND POLICY** (3) Causes of international trade, international trade policy, economic integration, trade problems of developing countries, role of multinational corporations in world trade. (PR: ECO 3101 or GEB 6716)
- ECO 6716 INTERNATIONAL MONETARY ECONOMICS** (3) International macroeconomic relationships, foreign exchange market, the international monetary system, balance of payments adjustments, macroeconomic policy in the open economy. (PR: ECO 3203 or GEB 6717)
- ECO 6906 INDEPENDENT STUDY** Var. Independent study. Student must have a contract with an instructor. Rpt. to a maximum of 6 hours. S/U.
- ECO 6917 DIRECTED RESEARCH** Var. Rpt. to a maximum of 6 hours. S/U. (PR: GR, ML)
- ECO 6936 SELECTED TOPICS IN ECONOMICS** (1-4) The course content will depend on student demand and instructor's interest. (PR: GS and CI)
- ECO 6971 THESIS: MASTER'S** Var. Rpt.
- ECP 6205 LABOR ECONOMICS** (3) Labor demand and supply, unemployment, discrimination in labor markets, labor force statistics. (PR: ECO 3101, GEB 6716, or ECO 6115)

- ECP 6238 THE ECONOMICS OF COLLECTIVE BARGAINING (3)** Process of negotiating collective bargaining agreements in private and public sectors. Not open to students who have completed ECP 4232.
- ECP 6405 INDUSTRIAL ORGANIZATION (3)** Structure of industry and its effect on economic efficiency. (PR: ECO 3101 or GEB 6716)
- ECP 6456 LAW AND ECONOMICS (3)** Impact of Tort, Criminal, Property, and Contract Law on the allocation of resources. (PR: ECO 3101 or GEB 6716)
- ECP 6614 URBAN ECONOMICS (3)** Economics of growth and development of urban areas, intraurban location patterns. (PR: ECO 3101 or GEB 6716)
- ECP 6624 REGIONAL ECONOMICS (3)** Geographical allocation of resources within and among regions, location of households and firms, interregional migration of labor and capital, regional growth and development, regional policy. (PR: ECO 3101 or GEB 6716)
- ECP 6705 ADVANCED MANAGERIAL ECONOMICS (3)** Microeconomic analysis for managerial decisions, demand theory, production and cost, industry structure. (PR: ECO 6115 or GEB 6716 and QMB 6305)
- GEB 6716 MICROECONOMIC ANALYSIS (3)** Theory of economic behavior of households and firms, consumer behavior, demand analysis, production and cost, factor markets.
- GEB 6717 MACROECONOMIC ANALYSIS (3)** Determination of output, employment, the price level, wages, interest rates, and the rate of economic growth. (PR: GEB 6716)

FINANCE

Chairperson: G. Kanatas; *Lykes Professor of Banking and Finance:* J.L. Pappas; *Professors:* A. Beenhakker, S.E. Bolten, R.G. Cox, S. Kapplin, R.L. Meyer, A. Schwartz, K. Wieand; *Associate Professors:* S. Besley, S. Bulmash, P. Kares, R.J. Rivard; *Assistant Professors:* H. Lee, S. Quintero, R. Sanders.

- FIN 6246 ADVANCED MONEY AND CAPITAL MARKETS (3)** The study of the role of financial markets, instruments, and institutions in the economy. It includes the study of flow of funds, interest rate determination, and the pricing of capital assets. (PR: Macroeconomic Analysis or equiv.)
- FIN 6375 FINANCIAL PLANNING FOR HEALTH ORGANIZATIONS (3)** An examination of tools and techniques of financial management in the administration of Health Care Organizations. Cannot be taken for credit by students who have taken FIN 6406.
- FIN 6406 FINANCIAL MANAGEMENT (3)** The study of processes, decision structures, and institutional arrangements concerned with the acquisition and utilization of funds by a firm. The course includes the management of the asset and liability structures of the firm under both certainty and uncertainty. (PR: ACG 6025 and GEB 6716)
- FIN 6445 FINANCIAL POLICY (3)** A case study approach to financial policy and strategy with emphasis on the firm's major financial decisions. (PR: FIN 6406 or CI)
- FIN 6605 INTERNATIONAL FINANCIAL MANAGEMENT (3)** The course provides a foundation for the understanding of financial management of international business. The subjects covered relate to: international finance, multinational business finance, and financial market theory. (PR: FIN 6406 or equiv.)
- FIN 6718 GOVERNMENTAL FINANCIAL PLANNING BUDGETING (3)** A thorough investigation of planning, budgeting, and control for government, including: budget procedures and methods for services and capital improvements (e.g., zero base budgeting); estimates of local revenues and expenditures; methods of financing capital facilities, debt financing and administration; measures of efficiency and effectiveness; and management of cash. (PR: Basic understanding of accounting and CI)

FIN 6804 THEORY OF FINANCE (3) A systematic and rigorous course in the theory of finance. Topics will include the theory of choice and the allocation of financial resources, the theory of optimal investment decisions and the theory of risk and uncertainty in financial decisions. It will also cover the theoretical concepts underlying financing decisions and the cost of capital. (PR: FIN 6406 or CI)

FIN 6816 INVESTMENTS (3) An examination of the risks and returns of alternative investment media within the framework of various valuation models. Special attention is given to the investment process and the criteria for investment decisions. (PR: FIN 6406)

FIN 6906 INDEPENDENT STUDY Var. Students must have a contract with an instructor. Rpt. S/U.

FIN 6915 DIRECTED RESEARCH Var. Rpt. S/U. (PR: GR, ML)

FIN 6934 SELECTED TOPICS IN FINANCE (1-4) Var. depending upon the scope and magnitude of the work required. Includes special lecture series. (PR: GS and CI)

FIN 7808 ADVANCED MICRO FINANCE (3) The study of advanced theoretical and empirical works in finance primarily relating to financial decisions at the level of the firm. (PR: FIN 6406, FIN 6804, ECO 5424 or Departmental approval)

FIN 7817 FINANCIAL MARKETS (3) The study of advanced theoretical and empirical works in finance primarily relating to financial institutions and markets. (PR: FIN 6246, FIN 6816, or Departmental approval)

FIN 7930 SELECTED TOPICS IN FINANCE (3) A study of selected topics of current issues on the frontiers of financial thought. Rpt. (PR: FIN 7808, QMB 7566, or Departmental approval)

FIN 7935 FINANCE RESEARCH SEMINAR (3) Theoretical and/or empirical research on finance related problems. This course will require research papers to be written and presented. It is designed to aid the student in developing a thesis and the research methodology necessary for the doctoral dissertation. Rpt. (PR: One semester of FIN 7930)

FIN 7980 DISSERTATION Var. Rpt. (PR: Admission to Candidacy)

INFORMATION SYSTEMS AND DECISION SCIENCES

Chairperson: P.H. Cheney; *Professors:* S.J. Birkin, P.H. Cheney, J.S. Hodgson; *Associate Professors:* H.C. Allen, R.A. Boggs, M.E. Cohen, T.C. Harrington, T.E. Johnson, M.J. White; *Assistant Professors:* M.B. Alexander, J.E. Blanton, E.M. Hufnagel, R.R. McGrath, T.L. Sincich, R.P. Will.

ISM 6021 MANAGEMENT INFORMATION SYSTEMS (3) A study of the analysis and application of management information systems; the impact of computers on decision making; the utilization of computer languages, statistical packages, research and business analysis.

ISM 6123 SYSTEMS ANALYSIS AND DESIGN (3) This course includes the foundations and methodologies for analysis of existing systems; the design, development, and implementation of new systems. (PR: ISM 6021 or equiv.; COBOL I or other approved language)

ISM 6127 DECISION SUPPORT SYSTEMS ANALYSIS AND DESIGN (3) Analysis and design of systems that integrate computer models, data bases, and the decision maker into an effective decision system. Emphasis is on decision maker's needs and human/machine compatibility. (PR: ISM 6123, QMB 6305, QMB 6603)

ISM 6217 DATABASE ADMINISTRATION (3) Advanced principles of Database Administration. Database Organization Models. Disaster Planning for Database Files. (PR: ISM 6123 or equiv.)

ISM 6225 DISTRIBUTED INFORMATION SYSTEMS (3) Analysis, design, implementation, and management of distributed information systems and networks. (PR: ISM 6123)

- ISM 6305 MANAGING THE INFORMATION SYSTEM FUNCTION (3)** An advanced study of information system management including system planning, project selection and management, and organizational information management policies. (PR: ISM 6021 or equiv.)
- ISM 6325 INFORMATION SYSTEMS CONTROL (3)** An advanced study of information system control and its application in system design and system management. (PR: ISM 6123 or equiv.)
- ISM 6405 DECISION SUPPORT SYSTEMS APPLICATIONS-COMPUTER ASSISTED DECISION MAKING (3)** Study of the principles of decision making and the human computer alliance with hands-on computer-assisted decision making for an organizational environment. Case studies and/or management games using micro-computers. (PR: FIN 6406, QMB 6305, QMB 6603)
- ISM 6456 MICROCOMPUTERS IN MANAGEMENT (3)** Analysis, design, implementation, and management of small business systems/microcomputer systems. (PR: ISM 6021)
- ISM 6905 INDEPENDENT STUDY (1-6)** Independent Study as directed by designated faculty. Rpt. S/U.
- ISM 6930 SELECTED TOPICS IN MIS (1-6)** Selected topics in MIS. Rpt.
- ISM 7113 INFORMATION REQUIREMENTS MANAGEMENT (3)** Understanding the theoretical foundation for analyzing problem situations and determining information technology requirements; tools and skill requirements of the systems manager; and methods of managing computer-based information systems. (PR: Departmental Approval)
- ISM 7140 SYSTEMS DEVELOPMENT METHODOLOGIES (3)** Realistic in-depth application perspective of the tools and techniques of systems development. (PR: Departmental Approval)
- ISM 7231 FILE ACCESS METHODS AND SYSTEMS SOFTWARE FOR APPLICATION DEVELOPMENT (3)** An information system, viewed as a user application process interacting with data in a particular hardware/software environment, is analyzed to provide insights into various file access alternatives and advantages. (PR: Departmental Approval)
- ISM 7422 BUSINESS APPLICATIONS OF ARTIFICIAL INTELLIGENCE AND EXPERT SYSTEMS (3)** Theory, concepts, methodologies, current trends, potential, interrelationships of artificial intelligence, expert systems, and decision process. (PR: Departmental Approval)
- ISM 7441C COMPUTER-BASED APPLICATIONS IN OPERATIONS MANAGEMENT (3)** Introduction to applications of computer technology in manufacturing and operations management. Focus on the design and implementation of applications to support the operations manager. (PR: Departmental Approval)
- ISM 7905 INDEPENDENT STUDY** Var. Independent study in which student must have a contract with an instructor. Rpt. to 6 hours. S/U.
- ISM 7910 MIS RESEARCH SEMINAR I (3)** Introduction to the MIS literature as it has developed over the past 30 years. Primary focus on the research literature. Other important writings will also be covered. Rpt. to 6 hours. (PR: Departmental Approval)
- ISM 7911 MIS RESEARCH SEMINAR II (3)** An examination of recently published empirical research in MIS and related disciplines, focusing on the development of a sound theoretical foundation for hypotheses, selection of appropriate design and statistical techniques, and evaluation of the results. (PR: ISM 7910)
- ISM 7930 SELECTED TOPICS IN MIS (1-3)** Rpt. up to 9 hours.
- ISM 7931 DIRECTED RESEARCH** Var. Rpt. up to 6 hours. S/U. (PR: Ph.D. level)
- ISM 7980 DISSERTATION** Var. Rpt. to 21 hours.
- MAN 6557 SIMULATION OF ADMINISTRATIVE SYSTEMS (3)** A study of manual and computer simulation techniques and their application to administrative problem solving. The course emphasizes model design and construction, data collection and analysis, model validation, and implementation problems. (PR: QMB 6305 and QMB 6603)

- MAN 6569 QUANTITATIVE APPLICATIONS FOR MANAGEMENT DECISIONS (3)** The integration of quantitative approaches and management science tools into the decision making process at various organizational levels and in various organizational settings involved in the production and dissemination of goods and services. (PR: QMB 6305 and QMB 6603)
- QMB 6305 STATISTICAL METHODS FOR MANAGEMENT (3)** A study of probability and statistics as applied to administrative problems of choice estimation and prediction under conditions of uncertainty. (PR: College algebra)
- QMB 6365 APPLIED BUSINESS FORECASTING (3)** Logic and application of quantitative forecasting, techniques to problems in business. (PR: QMB 6305 or equiv.)
- QMB 6375 APPLIED LINEAR STATISTICAL MODELS (3)** As study of multi-variate data analysis techniques and their applications to problems and systems in business. (PR: QMB 6305 or equiv.)
- QMB 6603 QUANTITATIVE METHODS FOR OPERATIONS MANAGEMENT (3)** Principles and concepts of production operation management and management science. The study and application of management science techniques to problems in production operation management environment. (PR: GS, college algebra)
- QMB 6607 MANAGERIAL STATISTICS (3)** Techniques for statistical decisions under incomplete information. Prior probabilities, likelihoods and revised probabilities. Loss functions, Bayesian decision rules. Sequential decision strategies. Optimal decision revision. (PR: QMB 6305)
- QMB 7565 INTRODUCTION TO RESEARCH METHODS (3)** A course in research strategies, design, analysis, and measurement for business research.
- QMB 7566 APPLIED MULTIVARIATE STATISTICAL METHODS (3)** A course in research analysis and measurement focusing on multivariate statistical analysis techniques.

MANAGEMENT

Chairperson: J.W. Koehler; *Professors:* A.C. Bartlett, C.F. Cohen, R.E. Dutton, J. Jermier, M. Karlins, R. Miljus, W.R. Nord, W.K. Schilit, H.M. Schroder, K. Van Voorhis, T.L. Wheelen; *Associate Professors:* G.A. Balfour, J.T. Knippen, J. Koehler, N. McIntosh, C.E. Michaels, R.L. Nixon; *Assistant Professors:* J. Gaines; *Lecturer:* E. Hargis.

- MAN 5714 URBAN MANAGEMENT (3)** The applicability of business management theories and practices to problem solving in the public sector. A formal theory of organization is used to compare and contrast private and public sector decision environments.
- MAN 6055 THE MANAGEMENT PROCESS (3)** An examination of the theory and practice of management, including the study of goals and means, the functions of management, and the administrative process in general. (PR: GS)
- MAN 6107 MANAGERIAL BEHAVIOR (3)** A laboratory approach to the understanding of patterns of interpersonal and inter-group behavior that are significant for the managerial role. Topics include perception expectation, motivation, leadership styles, decision making, conflict, and competition. (PR: MAN 6055 or CI)
- MAN 6135 MANAGEMENT OF COMMUNICATION (3)** Communication as management is the focus of this course. Examined are the process, nature, and variables that comprise organizational communications.
- MAN 6204 ORGANIZATIONAL THEORY AND MANAGEMENT (3)** The identification and measurement of variables that influence the effectiveness of public and private organizations, including the assessment of managerial skills, organizational behavior, control systems, and work design. (PR: MAN 6055 or CI)
- MAN 6266 MANAGEMENT OF PROFESSIONALS (3)** Organizational behavior of professional employees is investigated through available theories and concepts. Concentration is placed on the manager's role, especially that of matching organizational demands with individual talents and expectations. (PR: MAN 6055 or CI)

MAN 6289 THE MANAGEMENT OF ORGANIZATIONAL DEVELOPMENT AND CHANGE (3)

This course should be taken simultaneously with or following MAN 6204. A combination laboratory-field course requiring the integration of behavioral science theories, tools, concepts, and techniques learned in the lab to an OB application in a "real" organization. (PR: MAN 6055 or CI)

MAN 6305 HUMAN RESOURCE MANAGEMENT (3) Course focuses on the complex decision-making processes involved in the management of human resources within an organizational system geared to meeting both individual needs and organizational objectives.

MAN 6403 LABOR RELATIONS LAW (3) A survey of the various legal constraints applicable to the employer-employee relationship. Included are such areas as collective bargaining, civil rights, and fair labor standards. Also offered under Economics.

MAN 6411 LABOR – MANAGEMENT RELATIONS (3) An examination of the historical, legal, and behavioral aspects of organizational conflict as well as methods of conflict resolution. Particular emphasis on collective bargaining and management of labor relations.

MAN 6601 INTERNATIONAL MANAGEMENT (3) A study of the characteristics of the international and multinational company, environmental constraints, personnel and labor relations factors, and strategic planning and policies. (PR: MAN 6055 or CI)

MAN 6905 INDEPENDENT STUDY Var. Independent study in which student must have a contract with an instructor. Rpt. S/U.

MAN 6911 DIRECTED RESEARCH Var. Rpt. S/U. (PR: GR. ML)

MAN 6930 SELECTED TOPICS (1-4) Designed to be taken either under general guidance of faculty member on some facet of management not offered in a regular course or with regularly scheduled graduate courses for more in-depth study.

MAN 6971 THESIS: MASTER'S Var. Rpt.

MAN 7205 ORGANIZATION THEORY (3) Interdisciplinary overview of theory and research on macro organizational variables affecting organizational design and effectiveness. Focus on relationships between organizational structure and dynamics of human behavior. (PR: MAN 7225 or CI)

MAN 7225 RESEARCH ELECTIVE IN MANAGEMENT (3) Parametric & nonparametric statistics required. Research: Methods for organization analysis and management, design, sample selection, data collection, interpretation and presentation of results. (PR: MAN 6055, Research Methods I and II or equiv.)

MAN 7245 ORGANIZATIONAL BEHAVIOR (3) Behavioral concepts and practices in organizations. Emphasis on individual groups, intragroup and intergroup development and actions; organization; socialization; motivation; values; performance; communication effectiveness. (PR: MAN 7205 or CI)

MAN 7285 ORGANIZATIONAL DEVELOPMENT (3) Theory and research relating to management efforts to design and implement continual developmental activities to alter climate and improve productivity and effectiveness in dynamic organizations. (PR: MAN 7205 or CI)

MAN 7355 MANAGERIAL ASSESSMENT AND DEVELOPMENT (3) Theoretical foundations of measurement of managerial performance and development. Analysis of research on competence, style, ratings, and performance. (PR: MAN 7205 or CI)

MAN 7900 DIRECTED READINGS IN MANAGEMENT (3) Advanced reading program from selected areas in management under supervision of faculty member, requiring written contract describing requirements, prior to registration. Rpt. with changing topics. (PR: MAN 7245 and MAN 7285 or CI)

MAN 7905 INDEPENDENT STUDY IN MANAGEMENT Var. (1-4) Course permits a management doctoral student to conduct research and pursue specific areas of interest with a faculty member as supervisor. Contract required to establish performance levels expected. Rpt. (S/U Only)

MAN 7910 DIRECTED RESEARCH IN MANAGEMENT (3) Advanced directed research program in a specific area of management under supervision of a management faculty member. Rpt. as topics vary. (PR: MAN 7245 and MAN 7285 or CI)

MAN 7930 SELECTED TOPICS IN MANAGEMENT (3) A flexible format to offer specialized courses in management not available in regular curriculum. Rpt. as topics vary. (PR: MAN 7245 and MAN 7285 or CI)

MAN 7932 SEMINAR IN MANAGEMENT (3) Critical examination of problems and issues relevant to contemporary management, such as productivity improvement, environmental constraints, etc. Rpt. as topics vary. (PR: MAN 7245 and MAN 7285 or CI)

MAN 7935 SEMINAR IN STRATEGIC MANAGEMENT (3) Introduces basic theoretical issues and empirical research in strategic management. (PR: CC)

MAN 7980 DISSERTATION (21) Rpt. (PR: Successful completion of preliminary exams; successful completion of Field Exams in each Major and Secondary field and advancement to candidacy for Ph.D. program in Management.)

GENERAL BUSINESS ADMINISTRATION

Faculty listed under department offering course.

GEB 6735 SOCIAL, LEGAL, AND POLITICAL ENVIRONMENT OF BUSINESS (3) A study of the influence of social, cultural, legal, and political environment of institutional behavior, including the changing nature of the business system, the public policy process, corporate power, legitimacy and managerial autonomy, and organizational reactions to environmental forces. (PR: 12 hours of MBA Foundation Courses)

GEB 6895 BUSINESS POLICY AND STRATEGY (3) Advanced study of business decision-making processes under conditions of risk and uncertainty, including integrating analysis and policy formation at the general management level. (PR: Capstone course to be taken in final semester of program)

GEB 6971 THESIS: MASTER'S Var. Rpt.

MAN 5806 ENTREPRENEURSHIP AND SMALL BUSINESS MANAGEMENT COUNSELING (1-3) Small business management consulting to an on-going firm or development of a business plan for a new enterprise. Emphasis on developing consulting skills and recognizing implications of entrepreneurs capabilities and attitudes for success.

MARKETING

Chairperson: W.B. Locander; *Professors:* R.L. Anderson, S.A. Baumgarten, W.B. Locander, T.E. Ness, P.J. Solomon, J.R. Stock; *Associate Professors:* W.A. DeBord, L.R. Duffus, J.S. Hensel, D.J. Ortinau, M.B. Stamps; *Assistant Professors:* J.R. Goolsby, R.R. Lagace, J.L. Twible.

MAR 6158 INTERNATIONAL MARKETING MANAGEMENT (3) A study of marketing management activities from the perspective of firms doing business across national boundaries. Emphasis is upon aspects of marketing which are unique to international business and problem-solving within an international context. (PR: MAR 6815)

MAR 6216 LOGISTICS AND PHYSICAL DISTRIBUTION MANAGEMENT (3) A study of managerial methods focusing on the establishment and control of optimum customer service levels in the areas of inventory, transportation, fixed facility location, material handling, and information. Component parts of each system are analyzed quantitatively. Reading, lecture, and case analysis. (PR: MAR 6815 or CI)

MAR 6336 PROMOTIONAL MANAGEMENT (3) Management of the promotional function as part of the total marketing program. Includes a study of relevant buyer behavior concepts, resources and budgets, media, creative aspects, and effectiveness measurements as they relate to the

management tasks of developing, implementing, and evaluating promotional strategy. (PR: MAR 6815)

MAR 6406 SALES MANAGEMENT (3) A study of the sales function of the firm approached from the perspective of the sales manager. Emphasis is placed upon the development of the student's problem-solving, decision-making, and analytical skills. (PR: MAR 6815)

MAR 6646 RESEARCH FOR MARKETING MANAGERS (3) A study of marketing research methods and information systems and their relationship to marketing decision-making. Topics include value and cost of information, sample design, questionnaire design, statistical analysis, and report presentation. Lecture, reading, case analysis, and project. (PR: MAR 6815, QMB 6305, ISM 6021)

MAR 6815 MARKETING MANAGEMENT (3) Analysis of operational and strategic planning problems confronting marketing managers. Topics include buyer behavior, market segmentation, information systems, product selection and development, pricing, distribution, promotion, and sales force management. (PR: GEB 6715)

MAR 6816 MARKETING STRATEGY (3) A study of strategic marketing planning and problem-solving process as practiced by the modern market-oriented firm. The course is designed to develop marketing problem-solving, decision-making, and planning skills through the extensive use of case analysis. (PR: MAR 6815)

MAR 6907 INDEPENDENT STUDY Var. Must have a contract with an instructor. Rpt. S/U.

MAR 6916 DIRECTED RESEARCH Var. Rpt. S/U. (PR: GR. M.L.)

MAR 6936 SELECTED TOPICS IN MARKETING (1-4) The content and organization of this course will vary according to the interests of the faculty and students involved in any given term. Rpt. when subjects differ. (PR: CI)

MAR 7555 CONSUMER BEHAVIOR THEORY (3) This course investigates the interrelationships and applications of behavioral science theories, concepts and methodologies to problems of understanding group as well as individual behavior in the market place.

MAR 7635 ADVANCED MARKETING RESEARCH: DESIGN AND TECHNIQUE (3) An intensive study of the theoretical, conceptual, and methodological issues in survey and experimental marketing research. A review and expansion of advanced marketing data analysis methods. (PR: QMB 7565, QMB 7566 or CI)

MAR 7667 MARKETING MODELS AND STRATEGY APPLICATIONS (3) A model-building approach to the management of marketing. Includes models developed to aid in the design, implementation, and evaluation of corporate marketing strategies; information systems and marketing audits; and the interrelationships of economic, quantitative, and behavioral disciplines that provide the structure and tools necessary to develop and implement marketing decision support systems.

MAR 7787 MARKETING THEORY AND THOUGHT (3) An intensive study of marketing concepts and theories from 1900 to present. Emphasis is placed on the development of theory, as well as predictions of future theoretical developments. (PR: GS and CI)

MAR 7910 INDEPENDENT STUDY IN MARKETING (1-3) This course permits a doctoral student to pursue research in a specific area under the direct supervision of a faculty member. Rpt. to 6 hours. S/U.

MAR 7930 ADVANCED SEMINAR IN MARKETING (3) Broad readings within the field of marketing; an intensive survey and analysis of current marketing problems, their significance, evaluation, and probable outcome; suggestions of possible future empirical research directions and investigations.

MAR 7931 SEMINAR ON SELECTED MARKETING TOPICS (3) Intensive study of the theoretical, conceptual, and methodological issues and problems which impact managerial applications in selected topic areas, such as marketing channels, distribution/logistics,

environmental or social (nonprofit) marketing, consumer behavior, advertising/media research, or international marketing. Rpt. when topics vary.

MAR 7980 DISSERTATION Var. Directed research. (PR: Successful completion of preliminary exams; successful completion of field exam in each major and secondary field; and advancement to candidacy for Ph.D. program in marketing.)

College of Education

ADULT AND VOCATIONAL EDUCATION

Chairperson: W.E. Blank; *Professors:* W.B. James, F.F. Johnson; *Associate Professors:* W.E. Blank, R. Hill, K. Smith; *Assistant Professors:* D.B. Briscoe, D. Gardner, J. Scaglione.

ADULT EDUCATION

ADE 6080 ADULT EDUCATION IN THE UNITED STATES (4) A study of the adult education movement in the United States from its beginnings to the present lifelong learning enterprise it has become. Economic and cultural factors of the past are examined with a view toward implications for the future.

ADE 6160 PROGRAM MANAGEMENT IN ADULT EDUCATION (3) An examination of the methods for establishing a productive adult education program, and the principles and procedures involved in designing, organizing, operating, and evaluating comprehensive adult education programs.

ADE 6161 CURRICULUM CONSTRUCTION IN ADULT EDUCATION (4) Curriculum scope, the process of planning and organizing instructional programs with emphasis on task analysis and process evaluation. It concentrates on basic principles affecting the planning of Adult Education activities, including an overview of the human forces that both impinge and motivate human behavior in an adult learning environment.

ADE 6197 ADULT BASIC EDUCATION (4) An overview of adult basic education with an emphasis on current issues and problems of curriculum and instruction in program development and on culturally different adults.

ADE 6360 METHODS OF TEACHING ADULT EDUCATION (3) An exploration of different methods, techniques, and materials available to help adults learn. Concentration will be on the process of designing effective learning experiences for adults and developing the competencies of self-directed learning.

ADE 6370 TRAINERS IN BUSINESS AND INDUSTRY (3) A study of trainers in business and industry and acquisition of several key competencies required to fulfill this role.

ADE 6380 ADMINISTRATION OF LOCAL ADULT EDUCATION PROGRAMS (4) A study of the organization, selection of personnel, assignment of duties and responsibilities, and establishment of policies and procedures to accomplish the objectives of the local program within federal, state, and local requirements.

ADE 6385 THE ADULT LEARNER (3) An investigation of the physiological and psychological changes in the adult life span and the implications these have for adult learning capabilities. The course focuses on the identification of principles of adult learning, differences between adults and youth as learners, and a review of research on adult learning.

ADE 6387 SUPERVISION OF LOCAL ADULT EDUCATION PROGRAMS (4) A study of the factors involved in the supervision of instruction including plans for teacher education, improvement of instruction, coordination of activities, and personnel relations.

ADE 6946 PRACTICUM IN ADULT EDUCATION (2-6) A problem-centered field study in the local community, school, government, office, social agency, business, or industry setting.

ADE 6971 THESIS: MASTERS/EDUCATION SPECIALIST Var. Rpt.

Education

ADE 7185 COMMUNITY EDUCATION AND PROGRAM DEVELOPMENT (4) Examines the sociological and economic forces affecting community education programs and activities. Also, the concept of lifelong learning and its relationship to the development of community educational programs is examined. (PR: GS or CI)

ADE 7388 ADULT DEVELOPMENT AND LEARNING (3) This is an advanced in-depth study of the distinctive characteristics of adult life and learning. (PR: ADE 6385 or equiv.)

ADE 7910 DIRECTED RESEARCH IN ADULT EDUCATION (1-4) Directed research on topics related to adult education. Rpt up to 8 hours. (PR: Advanced graduate level)

ADE 7937 SEMINAR IN ADULT EDUCATION (1-4) Seminar in advanced topics in Adult Education. Rpt up to 12 hours. (PR: GL or CI)

ADE 7947 ADVANCED INTERNSHIP: ADULT EDUCATION (2-4) Supervised field experiences in an approved adult education setting (e.g., an agency, school, or institution). RPT up to 8 hours. S/U. (PR: Advanced graduate level only)

ADE 7980 DISSERTATION Var. Rpt. (PR: Admitted to Candidacy)

EDG 6906 INDEPENDENT STUDY Var. Independent study in which students must have a contract with an instructor. Rpt. S/U.

BUSINESS AND OFFICE EDUCATION

BTE 5171 CURRICULUM CONSTRUCTION: BUSINESS EDUCATION (3) Curriculum scope, the process of planning and organizing instructional programs with emphasis on task analysis and process evaluation.

BTE 5245 PROGRAM MANAGEMENT: BUSINESS EDUCATION (3) Organization, coordination, and budgeting of adult, cooperative, and special programs.

BTE 6435 IMPROVEMENT OF METHODS OF TYPEWRITING INSTRUCTION (3) Research-based study of methodology and psychology of teaching information processing. Includes techniques for developing specialized instructional materials and equipment for the exceptional student, cooperative and individualized learning activities and integration of academic content. (PR: EDF 6432, EDF 6481 or CI)

BTE 6446 THEORIES OF BASIC BUSINESS AND ACCOUNTING INSTRUCTION (3) This course contains a research-based study of theory and methodology in teaching basic business, administration, management, and accounting subjects. The course is available to majors and non-majors and for credit and non-credit workshops and seminars. (PR: Methods of Teaching or equivalent, EDF 6481 or CI)

BTE 6944 PRACTICUM: BUSINESS EDUCATION (3-6) A problem-centered field study in the local community, school, government, office, social agency, business, or industry.

DISTRIBUTIVE AND MARKETING EDUCATION

DEC 5165 PROGRAM MANAGEMENT: DISTRIBUTIVE EDUCATION (3) Organization, coordination, and budgeting of adult, cooperative, and special programs; includes management of the vocational student organization.

INDUSTRIAL AND TECHNICAL EDUCATION

EIV 5315 PROGRAM MANAGEMENT: DIVERSIFIED COOPERATIVE TRAINING (3) Organization, coordination, and budgeting of adult, cooperative, and special programs.

EVT 5369 PREPARATION AND DEVELOPMENT FOR TEACHING (4) The development and use of selected instructional materials, educational media, trainers, simulators, and similar instructional resources.

EVT 5664 SCHOOL COMMUNITY DEVELOPMENT (4) Identifying, assessing, and analyzing, individual, institutional and community needs for the purpose of cooperative program planning, community involvement, and public support.

- EVT 6264 ADMINISTRATION OF LOCAL PROGRAMS: VOCATIONAL (4)** Organization, personnel selection and assignment, and establishment of policies and procedures for local vocational programs within federal, state and local requirements.
- EVT 6265 SUPERVISION OF LOCAL PROGRAMS: VOCATIONAL EDUCATION (3)** A study of the factors involved in the supervision of instruction including plans for teacher education, improvement of instruction, coordination of activities, and personnel relations. (PR: C)
- EVT 6500 INDIVIDUALIZED INSTRUCTION (3)** Emphasis given to individualized instruction to include the special needs student, the slow learner, and the more capable student.
- EVT 6504 PLACEMENT OF SEVERELY HANDICAPPED PEOPLE (3)** A study of the purpose, methods, processes, and procedures used to plan, implement, and operate a Vocational Rehabilitation Cooperative School Counseling Program.
- EVT 6661 CURRENT TRENDS (3)** Historical information, issues, current trends, new dimensions, and problems in adult and vocational education and related areas.
- EVT 6769 METHODS, PROCEDURES, AND PROCESSES OF VOCATIONAL EVALUATION (3)** A study of the purposes, methods, processes and procedures used to plan, implement, and operate a vocational evaluation program.
- EVT 6926 STAFF DEVELOPMENT (1-5)** Implementation of new procedures addressed to discreet developmental needs of the staff as identified by an educational agency.
- EVT 6930 SEMINAR (4)** Focuses on special topics, interaction with visiting scholars, recent research and major initiatives within the profession.
- EVT 6948 PRACTICUM: INDUSTRIAL-TECHNICAL EDUCATION (3-6)** A problem-centered field study in the local community, school, government, office, social agency, business, or industry. (PR: EDF 6432 or EDF 6481 or C)
- EVT 6971 THESIS: MASTERS/EDUCATIONAL SPECIALIST** Var. Rpt.
- EVT 7066 FOUNDATIONS AND PHILOSOPHY OF VOCATIONAL, TECHNICAL AND ADULT EDUCATION (3)** Historical development and contemporary philosophies, cultural bases and practices of Vocational, Technical, and Adult Education. (PR: Preliminary admission to the advanced graduate program and/or C)
- EVT 7155 CAREER DEVELOPMENT IN VOCATIONAL, TECHNICAL, AND ADULT EDUCATION (3)** Development of a career model designed to facilitate career development of students and articulate vocational education and career guidance. (PR: Preliminary admission to the Graduate Program and C)
- EVT 7168 INSTRUCTIONAL DEVELOPMENT FOR VOCATIONAL, TECHNICAL, AND ADULT EDUCATION (4)** The systematic approach to vocational, technical, and adult education curriculum improvement and instructional development. Students will apply an instructional systems approach to the development of practical solutions to critical teaching and learning problems. (PR: EDG 5206 or C)
- EVT 7267 VOCATIONAL AND ADULT EDUCATION PROGRAM PLANNING AND IMPLEMENTATION (3)** Knowledge and skills necessary to participate in the initial determination, planning, organization, and implementation of new or expanded adult, vocational and technical education institutions or programs. (PR: GS or C)
- EVT 7761 RESEARCH SEMINAR IN VOCATIONAL, TECHNICAL, AND ADULT EDUCATION (3)** Examination and critical evaluation of research in a particular specialization area of Vocational, Technical, or Adult Education. Preparation of an individual research prospectus. Available to majors only. Rpt. up to 6 hours. (PR: Completion of program requirements in measurement and research or C)
- EVT 7980 DISSERTATION** Var. Rpt. (PR: Admitted to Candidacy)

CHILDHOOD/LANGUAGE ARTS/READING EDUCATION

Chairperson: S. Raines; *Professors:* S. Helton, J.P. Klesius, R. Linder, A.J. Lowe, J. McCarthy, L. McClellan, M. Mann, S. Raines, E.F. Searls; *Associate Professors:* N.A. Anderson, G.B. Barkholz, B.K. Clarke, F.W. Freshour, F.S. Goforth, P. Hanley, S. Homan, W. Kasten, J.R. King, J. Linder, J.T. Polito, C. Spillman, J. Swarzman; *Assistant Professors:* J. Fountain, B. Frye, P.L. Griffith, M. Guddemi, K. Laframboise, S. Miklos, R. Short, M. Wynn; *Instructors:* M. Hewitt, G. Houston, C. Schwartz.

ELEMENTARY EDUCATION

ARE 6358 ART FOR THE ELEMENTARY SCHOOL TEACHER (3) Exploration of various materials and techniques in relationship to current theories about art and the intellectual, creative, emotional, and esthetic growth of children.

EDE 6305 CREATIVE TEACHING IN THE ELEMENTARY SCHOOL (3) Creative processes and principles in the teaching of the arts and content subjects to elementary school pupils.

EDE 6906 INDEPENDENT STUDY: ELEMENTARY/EARLY CHILDHOOD EDUCATION (1-6) Independent study in which students must have a contract. Rpt. S/U.

EDE 6971 THESIS: MASTERS/EDUCATIONAL SPECIALIST Var. Rpt.

EDE 7980 DISSERTATION Var. Rpt. (PR: Admitted to Candidacy)

EDG 6415 PROJECT P.R.I.D.E. (PROFESSIONAL REFINEMENTS IN DEVELOPING EFFECTIVENESS) (3) Topics in academic questioning techniques, nonverbal communication, motivating changes in behavior, managing critical incidents in the classroom, and analyzing typical classroom practices for positive or negative impact.

EDG 6416 PROJECT T.E.A.C.H. (TEACHER EFFECTIVENESS AND CLASSROOM HANDLING) (3) Topics and techniques in verbal communication skills, questioning, paraphrasing, positive support skills, problem solving, counseling techniques, nonconfrontation strategies, group dynamics, and discipline decision making. (PR: Post-Baccalaureate status.)

EDG 6417 TEACHING THROUGH LEARNING CHANNELS (3) Focus on the area of teaching effectiveness in the cognitive domain and skill training on the identification and use of student learning channel strengths; analysis of curriculum based on learning channels to identify the skills necessary to complete learning tasks; the development of alternative strategies to meet the needs of all students.

EDG 6935 SEMINAR IN CURRICULUM RESEARCH (3) Critical evaluation of current research and curriculum literature, design and analysis of individual research topics leading to satisfaction of research requirements. (PR: EDF 6481)

EEC 6261 ADVANCED PROGRAMS IN EARLY CHILDHOOD EDUCATION (3) Innovative curriculum designs in Early Childhood Education, with emphasis given to related research. (PR: EDF 6432, EEC 4203 or CI)

EEC 6405 HOME - SCHOOL - COMMUNITY INTERACTION IN EARLY CHILDHOOD EDUCATION (3) Roles of parents, teacher aides, and community agencies involved in the education of the young child. (PR: EDG 6432, EEC 4203, or CI)

EEC 6406 SOCIAL GROWTH IN CHILDHOOD (3) Principal factors that influence the social development of young children with particular emphasis upon those cultural influences that affect both child development and the educational programs for the young child. (PR: Admission to College of Education)

EEC 6705 INTELLECTUAL GROWTH IN CHILDHOOD (3) Intellectual development of the normal child with particular emphasis on the studies of Jean Piaget and how they relate to curriculum for children, ages 0-8. Child study through observation required.

EEC 6926 WORKSHOP IN EARLY CHILDHOOD EDUCATION (3) Individual problems and innovations related to methods and materials of instruction in early childhood.

EEC 6971 THESIS: MASTERS/EDUCATIONAL SPECIALIST Var. Rpt.

EEC 7980 DISSERTATION Var. Rpt. (PR: Admission to Candidacy)

LAE 6301 LANGUAGE LEARNING IN CHILDHOOD (3) Research used to assess the language behavior of normal children and application of selected research methodology to understanding linguistic behavior of children.

LAE 6315 TEACHING WRITING IN THE ELEMENTARY CLASSROOM (3) Development of writing, its functions, conventions, and processes, and instructional strategies to be used across the elementary curriculum. Emphasis on both process and products generated by students. Available to majors and nonmajors. (PR: LAE 4314 or LAE 4355 or LAE 4642 or CI)

LAE 6415 LITERATURE AND THE LEARNER (3) Nature, scope, and uses of literature for instructional, information, and recreational purposes and implications of current theory, significant research, and issues in literature study as they relate to the learner.

LAE 6616 TRENDS IN LANGUAGE ARTS INSTRUCTION (3) Significant concepts, emerging trends, research, and instructional techniques for implementation and utilization of language arts in all areas of the curriculum. (PR: LAE 4314 or equivalent or CI)

LAE 7617 THEORIES AND PATTERNS OF ADVANCED LANGUAGE ARTS INSTRUCTION (3) New research findings and theories relating to language patterns and contemporary programs for teaching language arts. (PR: LAE 6616 or equiv.)

LAE 7746 APPLICATIONS OF THEORIES TO THE DEVELOPMENT OF LANGUAGE ARTS PROGRAMS (3) Application of research findings and theories for developing and organizing instructional improvement of the language arts. (PR: LAE 6616 or equivalent; and LAE 7617)

LAE 7747 LITERATURE PROGRAM DESIGN (3) Investigation and analysis of the research in literature instruction and the application of the findings to the development of literature programs. (PR: EDF 6481, LAE 6415, or LAE 6336 or CI)

MAE 6115 CURRENT TRENDS IN ELEMENTARY MATHEMATICS EDUCATION (3) Philosophy, content, and process of mathematics instruction in elementary school programs. (PR: MAE 4310 or equiv.)

MAE 6516 ADVANCED DIAGNOSIS AND TREATMENT OF LEARNING DISABILITIES IN SCHOOL MATHEMATICS (3) Symptoms, etiologies, and consequences of children's learning disabilities in mathematics; study and guided application of theoretical models used in diagnosis and treatment; supervised conduct of a case study. (PR: MAE 4310 or equiv.)

MAE 6549 ADVANCED PRACTICUM IN DIAGNOSIS AND TREATMENT OF LEARNING DISABILITIES IN SCHOOL MATHEMATICS (1-6) Supervised conduct of a case study with a student experiencing learning difficulties in mathematics. Procedures and reporting practices developed in MAE 6516 reviewed and extended. (PR: MAE 6516)

RED 6116 CURRENT TRENDS IN ELEMENTARY READING INSTRUCTION (3) Approaches, materials, and procedures in Elementary Reading instruction, with emphasis on pertinent research. Not to be used as a first course in Reading. (PR: RED 4310 or equiv.)

SCE 6616 TRENDS IN SCIENCE INSTRUCTION (3) Topics in the biological and physical sciences appropriate for teaching in elementary school programs. Analysis of modern curriculum materials used in presenting science as a process of inquiry. (PR: SCE 4310)

SSE 6617 TRENDS IN SOCIAL STUDIES INSTRUCTION (3) Crucial concepts drawn from the social sciences. Analysis of the problems approach. Students will select an area of independent study on an advanced level. (PR: SSE 4313)

READING EDUCATION

RED 6247 CURRICULUM AND SUPERVISION PROBLEMS IN READING (3) Planning and administering programs and preparation as consultants in reading. Intensive work on individual

Education

and group projects. Research paper required. (PR: RED 6116, RED 6540, RED 6544 or RED 6545, or CI)

RED 6365 READING IN SECONDARY AND HIGHER EDUCATION (3) Designed for student and inservice teachers with appropriate B.A. degrees. Content covers secondary, community college, and university levels. Organization permits student to work on applications to individual levels and disciplines. Research paper required. (PR: CI and GS; RED 4310, RED 4337, or RED 4360)

RED 6516 CORRECTIVE READING IN THE CLASSROOM (3) Use of diagnostic and prescriptive procedures with individual and group reading instruction. (PR: RED 4310 or CI)

RED 6540 CLASSROOM DIAGNOSIS OF READING PROBLEMS (3) Multiple factors related to reading problems and sources of information for assessing reading performance. Use of informal diagnostic instruments in the classroom. (PR: RED 6116 or CI)

RED 6544 REMEDIATION OF COMPREHENSION PROBLEMS (3) Methods and materials for teaching reading and listening comprehension. (PR: RED 6116 or CI)

RED 6545 REMEDIATION OF READING AND WRITING VOCABULARY PROBLEMS (3) Methods and materials for teaching vocabulary and word identification for reading. (PR: RED 6116 or CI)

RED 6546 DIAGNOSIS OF READING DISABILITIES (3) Causes of reading disability; techniques and materials in diagnosis of reading problems. Diagnoses of individual children are required. (PR: RED 6116)

RED 6747 SURVEY OF READING RESEARCH (3) Location of research information, the reading and evaluation of research, and the identification and understanding of important studies. (PR: EDF 6481, RED 6116, RED 6540 or RED 6546, CI)

RED 6906 INDEPENDENT STUDY: READING EDUCATION (1-6) Independent study in which students must have a contract with an instructor. Rpt. S/U.

RED 6971 THESIS: MASTERS/EDUCATIONAL SPECIALIST Var. Rpt.

RED 7048 READING AS A SYMBOLIC PROCESS (3) Seminar designed to develop critical thinking about the reading process and reading acquisition. (PR: RED 6116 or RED 6365, GS or CI)

RED 7745 RESEARCH IN READING INSTRUCTION (3) Seminar examining in depth the current research on instruction in the field of reading education. (PR: RED 6116 or RED 6365, GS or CI)

RED 7938 ADVANCED GRADUATE SEMINAR IN READING/LANGUAGE ARTS (3) Discussion and evaluation of current issues and research in Reading/Language Arts and related fields. Rpt. to 6 hours. Required for each Ph.D. Student.

RED 7980 DISSERTATION Var. Rpt. (PR: Admission to Candidacy)

EDUCATIONAL LEADERSHIP

Chairperson: D.E. Orlosky; *Professors:* W.F. Benjamin, J.C. Bondi, P.E. McClendon, D.E. Orlosky, D.D. Peterson, D.M. Purdom, A. Shapiro, K. Snyder, L. Tuttle, M.G. Villeme, J. Wiles; *Associate Professors:* D. Evans, T.W. Keene, R.F. Pride; *Assistant Professor:* J. Arhar; *Senior Research Scholar:* R. Anderson.

EDA 6061 PRINCIPLES OF EDUCATIONAL ADMINISTRATION (3) Educational administration as a profession. Consideration of organization, control, and support of the educational system.

EDA 6106 ADMINISTRATIVE ANALYSIS AND CHANGE (3) Change and change strategies in formal and informal organizations are foci. Students will develop change strategies and will apply them to selected situations. (PR: EDA 6061)

- EDA 6192 EDUCATIONAL LEADERSHIP (3)** Administration course that addresses change, influences, and planning systems. Also examines personnel functions for administrators. (PR: EDA 6061)
- EDA 6195 POLICY DEVELOPMENT (3)** Contemporary research on diffusion of innovations, political power in policy decision making. Role of establishing educational policies. (PR: EDA 6061)
- EDA 6232 SCHOOL LAW (3)** Basic essentials of School Law. A review of court decisions affecting American education with emphasis on Florida State statutes. (PR: GS, EDA 6061, or CI)
- EDA 6242 SCHOOL FINANCE (3)** Financial support of education by local, state, federal sources, with emphasis on Florida; introduction to educational budgeting. (PR: GS, EDA 6061 or CI)
- EDA 6262 PLANNING EDUCATIONAL FACILITIES (3)** Problems in the planning, construction, and use of educational facilities. Visitation and/or evaluation of selected schools. (PR: GS, EDA 6061, or CI)
- EDA 6503 THE PRINCIPALSHIP (3)** Organization and administration of the school. Emphasis on the competencies necessary for leadership and management by the principal as the administrator and instructional leader. (PR: EDA 6061)
- EDA 6910 DIRECTED RESEARCH (1-19) S/U.** (PR: GS or ML, EDA 6061)
- EDA 6931 CASE STUDIES IN SCHOOL ADMINISTRATION (3)** Helps prospective administrators understand administrative problems, propose feasible solutions, and evaluate courses of action. Develops skill in decision making. (PR: GS, EDA 6061 or CI)
- EDA 6945 ADMINISTRATION PRACTICUM (3-8)** Field experiences in school systems for identifying and analyzing educational problems and their solutions. Application of concepts developed in the student's program. (PR: GS, EDA 6061 and completion of a significant amount of the student's program)
- EDA 6971 THESIS: MASTERS/EDUCATIONAL SPECIALIST** Var. Rpt.
- EDA 7222 ADMINISTRATION OF SCHOOL PERSONNEL POLICIES AND PRACTICES (3)** Administration of school personnel policies and practices relating to professional staff, supporting staff, and students. (PR: GS, EDA 6061 or CI)
- EDA 7233 LEGAL DIMENSIONS OF SCHOOL ADMINISTRATION (3)** Historical perspective in law and education with indepth reviews of case law showing the evolution of courts as educational policy makers. (PR: GS, EDA 6232, CI)
- EDA 7247 ADVANCED SCHOOL FINANCE (3)** Advanced treatment of school finance. Development, implementation, and evaluation of financial resource and allocation systems. Emphasis is on intradistrict allocation. (PR: GS, EDA 6242 or CI)
- EDA 7980 DISSERTATION** Var. Rpt. (PR: Admitted to Candidacy)
- EDE 6205 SCHOOL CURRICULUM: ELEMENTARY (3)** Organization, curriculum, and instruction of the elementary school with emphasis on the nature of the students served. Open to all education graduate students. (PR: EDG 4620, EDG 6627)
- EDG 6285 SCHOOL CURRICULUM IMPROVEMENT (3)** Open only to teachers in service. Complete faculty participation required. (PR: Workshop for the improvement of the curriculum of an elementary or secondary school)
- EDG 6627 FOUNDATIONS OF CURRICULUM AND INSTRUCTION (3)** Introductory course in curriculum and instruction at the graduate level, basic to all specialized courses in the field. Emphasis on foundations, design, basic concepts, theory, and trends of curriculum from early childhood through secondary levels. Open to all graduate students. (PR: EDG 4620)

Education

- EDG 6693 PROBLEMS IN CURRICULUM AND INSTRUCTION: ELEMENTARY (1-3)** For teachers, supervisors, and administrators. Curricular and instructional problems of the elementary school. Common problems of special interest to the participants. Normally, for certification requirements only. (PR: EDG 4620, EDG 6627)
- EDG 6694 PROBLEMS IN CURRICULUM AND INSTRUCTION: MIDDLE SCHOOL (1-3)** For teachers, supervisors, and administrators. Curricular and instructional problems of the middle school. Common problems or problems of special interest to the participants. Normally, for certification requirements only. (PR: EDG 4620, EDG 6627)
- EDG 6695 PROBLEMS IN CURRICULUM INSTRUCTION: SECONDARY (1-3)** For teachers, supervisors, and administrators. Curricular and instructional problems of the secondary school. Common problems or problems of special interest to the participants. Normally, for certification requirements only. (PR: EDG 4620, EDG 6627)
- EDG 6931 SELECTED TOPICS IN EDUCATION (1-4)** Each topic is a course under the supervision of a faculty member. The title and content will vary according to the topic. (PR: GS and CI)
- EDG 6947 INTERNSHIP (1-9)** Open to graduate degree candidates only. Supervised teaching at the secondary or junior college level as appropriate. S/U (PR: CI)
- EDG 6971 THESIS: MASTERS/EDUCATION SPECIALIST** Var. Rpt. Interdisciplinary Studies only.
- EDG 7667 ANALYSIS OF CURRICULUM AND INSTRUCTION (3)** Various theoretical frameworks for analyzing curriculum and instruction. Emphasis on rational models of curriculum inquiry. (PR: EDG 6627)
- EDG 7692 ISSUES IN CURRICULUM AND INSTRUCTION (3)** Identification and analysis of major problems and issues in curriculum and instruction. Critical examination of efforts to deal with these issues. (PR: EDG 6627)
- EDG 7931 SELECTED TOPICS (1-4)** Selected topics in advanced Education. Rpt. up to 12 hours. (PR: CC)
- EDG 7937 GRADUATE SEMINAR (1-4)** Seminar in advanced Education. Rpt. up to 12 hours. (PR: CC)
- EDG 7980 DISSERTATION** Var. Interdisciplinary Studies only. (PR: Admitted to Candidacy)
- EDM 6235 SCHOOL CURRICULUM: MIDDLE (3)** Examines the organization, curriculum, and instruction of the middle school with special emphasis on the nature of the students served. Open to all education graduate students. (PR: EDG 4620, EDG 6627)
- EDS 6050 PRINCIPLES AND PRACTICES OF EDUCATIONAL SUPERVISION (3)** Role definitions of supervision, analysis of role conflict, needs assessments, supervising the planning of instruction, and observing the delivery of instruction. (PR: GS)
- EDS 6131 CLINICAL SUPERVISION (3)** Trains administrators, supervisors, and peer teachers in observing and diagnosing teacher classroom performance, writing remedial plans, conducting post observation conferences, and evaluating performance. (PR: GS, EDS 6050)
- EDS 6239 PROBLEMS IN SUPERVISION (3)** Analysis of instructional problems in schools. Emphasis on supervisory tasks, case studies, and the application of problem solving techniques and strategies. (PR: GS, EDS 6050 or CI)
- EDS 7130 TEACHER EVALUATION: PROCESS AND INSTRUMENTS (3)** Examines procedures for establishing content validity, reliability, norms, and predictive validity of teacher evaluation systems. Examines the psycho/metric qualities of selected instruments. (PR: EDA 6061, EDF 6432, CI)

ESE 6215 SCHOOL CURRICULUM: SECONDARY (3) Examines the organization, curriculum, and instruction of the secondary school with special emphasis on the nature of the students served. Open to all education graduate students. (PR: EDG 4620, EDG 6627)

HIGHER EDUCATION

EDH 6061 THE JUNIOR COLLEGE IN AMERICAN HIGHER EDUCATION (4) Philosophical and cultural bases for definition of its role and contemporary issues, such as control, financing, and curricular patterns. Emphasis on the place and problems of the community junior college.

EDH 6938 SEMINAR IN COLLEGE TEACHING (3) Implications of learning theory and student characteristics for teaching at the college level. Types of teaching procedures, innovation, evaluation, student freedom, and responsibility for learning.

EDH 7225 CURRICULUM DEVELOPMENT IN HIGHER EDUCATION (3) Emphasis on curriculum perspectives, procedures, and practices in higher education; principles of curriculum and instruction in higher education; theory and practices in goal setting, curriculum planning, instructional improvement, and curriculum design. (PR: GS or CI)

EDH 7505 HIGHER EDUCATION FINANCE (3) Emphasis on financial policies, planning, and budgeting; allocation; financial analysis and management, patterns of expenditure, sources of income. Relationships between educational objectives and resource allocations. (PR: GS or CI)

EDH 7635 ORGANIZATION AND ADMINISTRATION OF HIGHER EDUCATION (3) Examines the concepts about higher education organizations and administration, the behaviors of those organizations and administrators, and the relationships between concept and practice. (PR: GS or CI)

EDH 7930 HIGHER EDUCATION SEMINAR (1) Topics of general and special concern in higher education, restricted to advanced graduate students. Rpt. up to 8 hours.

EDH 7980 DISSERTATION Var. Rpt. (PR: Admitted to Candidacy)

EDUCATIONAL MEASUREMENT AND RESEARCH

Chairperson: B.W. Hall; *Professors:* L. Carey, B.W. Hall, W.G. Katzenmeyer, D.E. Stone, R.E. Wilk; *Associate Professors:* C. Hines, G. Hutchcraft, R. Smith; *Assistant Professors:* R. Dedrick, J. Kromrey.

EDF 6407 STATISTICAL ANALYSIS FOR EDUCATIONAL RESEARCH I (4) Theory and application of statistical procedures to problems in education; (1) Descriptive statistics, (2) Probability-sampling distributions, (3) Inferential statistics-interval estimation, tests of significance (z , t , F -one way ANOVA). Coordinated use of computer included.

EDF 6432 FOUNDATIONS OF MEASUREMENT (3) Basic measurement concepts, role of measurement in education, construction of teacher-made tests, interpretation of standardized tests, and fundamental descriptive statistics for use in test interpretation.

EDF 6446 DEVELOPMENT AND VALIDATION OF TESTS IN EDUCATION (3) Design, construction, and validation of state-wide tests. Special emphasis on domain sampling, item response theory, item scaling, item fit, and constructing, maintaining, and updating item banks. (PR: EDF 6432, EDF 6407 or CI)

EDF 6481 FOUNDATIONS OF EDUCATIONAL RESEARCH (3) Analysis of major types of educational research designs, including experimental, correlational, ex post facto and case studies. (PR: EDF 6432, or CI)

EDF 6492 APPLIED EDUCATIONAL PROGRAM EVALUATION (3) Design, development, implementation, interpretation, and communication of both formative and summative educational program evaluation studies. (PR: EDF 6432, EDF 6446, or CI)

EDF 6971 THESIS: MASTERS/EDUCATIONAL SPECIALIST Var. Rpt.

EDF 7408 STATISTICAL ANALYSIS FOR EDUCATIONAL RESEARCH II (4) Theory and application of statistical procedures to problems in education; (1) ANOVA-factorial; ANCOVA;

Education

- (2) multiple correlation and regression – a specific technique and a general approach to data analysis. Coordinated use of computer included. (PR: EDF 6407 or equiv. or CI)
- EDF 7410 DESIGN OF SYSTEMATIC STUDIES IN EDUCATION** (4) Theory and application of major design models to systematic inquiry, from experimental to naturalistic models. Nature and role of sampling in systematic studies. (PR: EDF 6407, EDF 7408 or equiv. or CI)
- EDF 7437 ADVANCED EDUCATIONAL MEASUREMENT I** (3) Logical, empirical, and statistical models of measurement processes. Examination of issues relative to scaling with a focus on reliability of measurement. Critique of available instruments for measurement in psychology and education. (PR: EDF 6432 or equiv.; EDF 6407 or equiv.)
- EDF 7438 ADVANCED EDUCATIONAL MEASUREMENT II** (4) Scaling techniques in measurement. Item analytic theories and practices. Validation theory and construction and validation of instruments for measurements in education. (PR: EDF 7437 or CI)
- EDF 7484 STATISTICAL ANALYSIS FOR EDUCATIONAL RESEARCH III** (4) Theory and application of selected multivariate statistical procedures, including Canonical Correlation, Discriminant Analysis, Multivariate Analysis of Variance, Factor Analysis, and Path Analysis. (PR: EDF 7408 or CI)
- EDF 7485 THEORY AND PRACTICE OF EDUCATION EVALUATION** (3) Comparative analysis of contemporary evaluation approaches; theory and scientific basis of evaluation; social and political impact of evaluation on educational decision making; and the design, implementation and reporting of evaluation studies. (PR: EDF 7493 or CI)
- EDF 7488 APPLICATION OF COMPUTER LANGUAGE AND PROCEDURES IN EDUCATION** (1) Development of understanding and technical skill in relation to computer and data processing approaches to solution of educational research and administrative problems. (PR: EDF 6407 or CI)
- EDF 7493 SYSTEMS APPROACHES FOR PROGRAM PLANNING, EVALUATION AND DEVELOPMENT** (4) Systems theory applied to problems in program planning, evaluation, and development. Analysis of evaluation models and policy analysis. Application of Networking, PERT, and Modeling procedures to selected problems in education. Emphasis on decision oriented research. (PR: Advanced GS or CI)
- EDF 7940 PRACTICUM IN EDUCATIONAL PLANNING, EVALUATION, AND DEVELOPMENT** (1-8) Supervised practicum in which the student assumes major responsibility for significant planning, evaluation, research, or development activity. Rpt. up to 8 hours. S/U. (PR: EDF 7408, EDF 7493)
- EDF 7980 DISSERTATION** Var. Rpt. (PR: Admission to Candidacy)
- EDG 7910 DIRECTED RESEARCH** Var. Rpt. S/U. (PR: GR. Ph.D. level)

MUSIC EDUCATION

See Fine Arts for Faculty and Course Descriptions

- MUE 6080 FOUNDATIONS AND PRINCIPLES OF MUSIC EDUCATION** (3)
- MUE 6116 ADVANCED ELEMENTARY SCHOOL MUSIC** (3)
- MUE 6145 MUSIC SUPERVISION AND ADMINISTRATION** (3)
- MUE 6336 ADVANCED SECONDARY VOCAL MUSIC** (3)
- MUE 6347 ADVANCED MATERIALS FOR INSTRUMENTAL MUSIC EDUCATION** (3)
- MUE 6906 INDEPENDENT STUDY: MUSIC EDUCATION** (1-6)
- MUE 6971 THESIS: MASTERS/EDUCATIONAL SPECIALIST** Var. Rpt.
- MUE 7810 FOUNDATIONS OF MUSICAL LEARNING AND TEACHING** (3)
- MUE 7830 AESTHETICS IN MUSIC EDUCATION** (3)
- MUE 7980 DISSERTATION** Var. Rpt. (PR: Admitted to Candidacy)

SCHOOL OF PHYSICAL EDUCATION, WELLNESS, AND SPORT STUDIES

Director: L.E. Bowers; *Professors:* L.E. Bowers, R. Heeschen, H.A. Hoffman, S.E. Klesius, C.D. Smith; *Associate Professors:* B.L. Beasley, N. Faucette, W.D. Hall, H. Weinberg, J.F. Young.

- PET 6016 PROFESSIONAL ASSESSMENT (3)** Personal assessment of current trends and knowledge in the professional literature. Development of competencies in research review, written and oral communication skills.
- PET 6205 SOCIO-PSYCHOLOGICAL ASPECTS OF HUMAN MOVEMENT (3)** Psychological and sociological implications of movement to historical and contemporary man. Emphasis on concept, role of movement in society, and values and attitudes held toward movement.
- PET 6305 BIO-KINETICS OF HUMAN MOVEMENT (3)** Integration of basic kinesiological foundations applied to teaching physical education. Specific topics include: physical growth and neuro-muscular development, physical principles of human movement and the effects of exercise on the muscular and cardiorespiratory systems.
- PET 6355 ADVANCED EXERCISE PHYSIOLOGY (3)** Linked to PET 6355L. The study of exercise physiology, including ergometry, body composition, pulmonary function, energy metabolism, work capacity, cardiovascular thermodynamics, and acute and chronic response to exercise. (PR: CI)
- PET 6355L ADVANCED EXERCISE PHYSIOLOGY LABORATORY (1)** Linked with PET 6355. Provides laboratory learning experiences for Advanced Exercise Physiology, PET 6355, including ergometry, body composition assessment, pulmonary function tests, oxygen uptake, stress tests, muscular strength, flexibility, blood studies, metabolism. (PR: CI)
- PET 6356L EXERCISE PHYSIOLOGY LABORATORY TECHNIQUES (3)** Theoretical and laboratory methods utilized in exercise physiology adult fitness and sports medicine programs. Hands-on exposure to laboratory equipment and development of skills in conducting laboratory measurements in human performance. (PR: PET 6355 and PER 6355L)
- PET 6396 SPECIALIZED STUDY IN BIO-KINETICS OF HUMAN MOVEMENT (1-4)** Will provide in-depth study in specific areas related to neurological, physiological, and mechanical principles of human development. Rpt.
- PET 6425 CURRICULUM AND INSTRUCTIONAL PROCESS IN PHYSICAL EDUCATION (3)** Will provide indepth study of the structure of subject matter, theoretical curriculum models, styles of teaching, and investigation of the nature of the learner as these relate to teaching physical education. Fieldwork may be required.
- PET 6496 SPECIALIZED STUDY IN CURRICULUM AND INSTRUCTIONAL PROCESS IN PHYSICAL EDUCATION (1-4)** Will provide in-depth study in specific areas related to the teaching-learning process of physical education. Rpt.
- PET 6645 PHYSICAL EDUCATION FOR THE HANDICAPPED (4)** The course is concerned with the motor performance and physical fitness of mentally and motorically handicapped individuals. Study includes psycho-educational characteristics; planning, conducting, and evaluating individualized programs of physical education; and review of relevant literature. Fieldwork may be required.
- PET 6695C (FORMERLY PET 6646) PHYSICAL EDUCATION FOR THE HANDICAPPED PRACTICUM (2-4)** School or treatment center-based experience providing evaluation and instructional services. Seminars are conducted to discuss professional literature, teaching strategies, and curriculum organization and evaluation. Rpt. (PR: PET 6645 or CI)
- PET 6906 INDEPENDENT STUDY; PROFESSIONAL PHYSICAL EDUCATION (1-6)** Independent study. Students must have a contract with an instructor. Rpt. S/U.
- PET 6910L RESEARCH PROJECT IN PHYSICAL EDUCATION (1-4)** In-depth research study of selected topics concerning human movement. Topics will vary according to needs and interests of student. Rpt.

PSYCHOLOGICAL AND SOCIAL FOUNDATIONS

Chair: E.B. Kimmel; *Professors:* E.C. Anderson, J.W. Barnard, D.E. Bostow, W.W. Burley, J.C. Dickinson, J.C. Follman, O.G. Geiger, E.V. Johannningmeier, E.B. Kimmel, H.M. Knoff, D.L. Lantz, E.E. Panther, S.H. Silverman; *Professor Emeritus:* V.J. Drapela, C. Weingartner; *Associate Professors:* G. Batsche, W.T. Bridges, D.L. Carroll, T.D. Evans, G.H. Kincaid, R. Mumme, C.M. Story; *Assistant Professors:* D. Anderson, N.P. Greenman, M.S. Street.

COUNSELOR EDUCATION

EGC 6006 PRINCIPLES OF THE COUNSELING PROFESSION (4) Required first course for majors in guidance and counseling; an elective for students in other programs. Guidance as a profession; its philosophical framework; its scope and functions; its organization and administration in various settings.

EGC 6105 COMPARATIVE GUIDANCE AND COUNSELING (3) Study of guidance theories and practices in selected foreign countries as compared with the American guidance model. Evaluation of foreign guidance through critical analysis of primary sources. For example: guidance philosophy and practice in countries of the Soviet Bloc, Western Europe, and Latin America. (PR: CI)

EGC 6165 STUDY OF MENTAL DISORDERS FOR COUNSELORS (3) A study of mental disorders emphasizing recognition of behavioral symptoms so that counselors can apply appropriate helping approaches or refer clients for further diagnosis and treatment. Intended primarily for counselors working with adult clients. (PR: EGC 6006 or CI)

EGC 6225 APPRAISAL PROCEDURES IN COUNSELING (4) A study of test and non-test techniques of appraisal with emphasis on the use of standardized test data in guidance programs and the use of the individual case study approach. (PR: EGC 6006)

EGC 6306 CAREER DEVELOPMENT (4) Study of the information service in guidance as it relates to life style and career development. Theories dealing with career planning. Application of educational, vocational, and personal-social information resources to lifelong human development. (PR: EGC 6006)

EGC 6435 COUNSELING THEORIES AND PRACTICES (4) Nature of the counseling process with emphasis on major theoretical approaches, supervised practice, and application. Focuses upon working with adolescents and adults, includes attention to (a) philosophic bases of helping relationships and (b) consultation theory and practice. (PR: EDF 6354 and EGC 6006)

EGC 6464 COUNSELING CHILDREN (4) Nature of the counseling process with emphasis on major theoretical approaches, supervised practice, and application. Focuses upon work with elementary age children and consultations with parents and teachers. (PR: EDF 6354 and EGC 6006)

EGC 6472 COUNSELING SPECIAL POPULATION GROUPS (3) Application of counseling theory to work with clients from special population groups, e.g., exceptional students, dropouts, ethnic minorities, women re-entering the labor force, and older persons. Each student will select a specific population group for supervised research. (PR: EGC 6435 or EGC 6464)

EGC 6509 GROUP THEORY AND PRACTICUM: CHILDREN (4) Experiential study of group structures, group dynamics, methodology, and leadership models applicable to counseling and guidance in the elementary schools. Skill building through supervised practicum in leading groups of elementary school children. (PR: EGC 6464)

EGC 6510 GROUP THEORY AND PRACTICUM: ADOLESCENTS AND ADULTS (4) Experiential study of group structures, group dynamics, methodology, and leadership models applicable to counseling adolescents and adults. Skill building through supervised practicum in leading groups of adolescents or adults. (PR: EGC 6435)

EGC 6706 CONSULTATION FOR THE COUNSELING PROFESSION (3) A study of consultation theory and practice as used by counselors working in schools and mental health facilities, particularly with educators, other professionals, and parents, individually and in groups. Non-majors are admitted only with instructor's permit. (PR: EGC 6435 or EGC 6464)

- EGC 6728 HUMAN SEXUALITY ISSUES FOR COUNSELORS** (4) Emphases include exploration of various dimensions of human sexuality; dynamics of major individual and societal sexuality issues; theoretical approaches to sexuality counseling. (PR: EGC 6435)
- EGC 6785 LEGAL AND ETHICAL ISSUES IN THE COUNSELING PROFESSION** (3) A study of legal, ethical and related issues affecting the role and responsibilities of counselors in schools and mental health facilities. (PR: EGC 6006)
- EGC 6830 PRACTICUM IN COUNSELING CHILDREN** (4) Supervised counseling experiences for integration of knowledge and skills gained in didactic study. Focus is upon working with elementary age children, parent and teachers. S/U. (PR: CC)
- EGC 6835 PRACTICUM IN COUNSELING ADOLESCENTS AND ADULTS** (4) Supervised counseling for integration and application of knowledge and skills gained in didactic study. Focus is upon working with adolescents and adults. S/U. (PR: CC)
- EGC 6891 INTERNSHIP IN COMMUNITY AGENCY COUNSELING** (6) Field experience involving one semester of full-time participation in the counseling and related activities of a public or private agency providing mental health services to the community. (PR: All required EGC courses.)
- EGC 6905 INDIVIDUAL STUDY** (1-4) Independent study, research, and experience relating to guidance and pupil personnel services under the supervision of a member of the Counselor Education faculty. Rpt. up to 4 hours. (PR: CI)
- EGC 6935 SEMINAR IN GUIDANCE** (1-2) Significant issues in the field of guidance; topics for discussion will vary according to needs and interests of students. Rpt. up to 4 hours. S/U. (PR or CR: EGC 6006, CI)
- EGC 6948 INTERNSHIP IN SCHOOL GUIDANCE** (6) Field experience involving one semester of full-time participation in all guidance-related activities in an elementary or secondary school; classroom guidance, individual and group counseling, assessment/evaluation, staffing, record keeping, etc. S/U. (PR: CC)
- EGC 6971 THESIS: MASTERS/EDUCATIONAL SPECIALIST** Var. Rpt.
- EGC 7437 ADVANCED COUNSELING: THEORIES AND PRACTICUM** (5) Advanced study of major counseling theories and their application in therapeutic work with individual clients and with groups in a variety of settings. Supervised practice in individual and group counseling with emphasis on integration of theory and practice. (PR: CC)
- EGC 7446 CONSULTATION AND SUPERVISION: THEORIES AND PRACTICUM** (5) Theory and methodology of consultation; the role of the counseling professional as consultant and as a supervisor of counselor trainees and counseling practitioners. Practice learning experiences in consulting and supervision under faculty direction. (PR: CC)
- EGC 7894 ADVANCED INTERNSHIP IN COUNSELOR EDUCATION** (2-8) Supervised field experiences in an approved agency, educational institution, or industrial setting: counseling, consulting, supervision, applied research, administration, and evaluation of counseling/guidance services. Rpt. up to 8 hours. S/U. (PR: CC)
- EGC 7935 ADVANCED SEMINAR IN COUNSELOR EDUCATION** (2) Seminar for advanced graduate students in counselor education. Issues and trends in Guidance and Counseling will be studied and discussed. Rpt. up to 2 hours. S/U. (PR: CI)
- EGC 7980 DISSERTATION** Var. Rpt. (PR: Admission to Candidacy)

PSYCHOLOGICAL FOUNDATIONS

- EDF 5136 ADOLESCENCE** (4) Educational, intellectual, personality, physical, social, and vocational factors in adolescence and their importance for school personnel.
- EDF 5285 PROGRAMMED INSTRUCTION AND TEACHING MACHINES** (3) Principles for programming in several academic subjects.

Education

- EDF 6120 CHILD DEVELOPMENT (4)** Educational, emotional, hereditary, intellectual, social, and physical factors influencing child growth and development. (PR: EDF 6211 or CI)
- EDF 6165 GROUP PROCESSES FOR EDUCATIONAL PERSONNEL (3)** Application of group process research to the needs of professional educators and training officers. (PR: CI)
- EDF 6166 CONSULTING SKILLS FOR STAFF DEVELOPMENT (1-3)** Knowledge and skill training for consulting with organizational clients to solve educational problems and design learning environments or programs. (PR: CI)
- EDF 6167 EXPERIENTIAL LEARNING: THEORY AND METHODS (3)** Theory and methods of experiential learning in both formal and organizational contexts. (PR: CI)
- EDF 6211 PSYCHOLOGICAL FOUNDATIONS OF EDUCATION (3)** Selected topics in psychology of human development and learning, related to schools and educational settings.
- EDF 6213 BIOLOGICAL BASES FOR LEARNING BEHAVIOR (3)** Human biological development and its influence upon learning and behavior. (PR: One course in Educational Psychology)
- EDF 6215 LEARNING PRINCIPLES APPLIED TO INSTRUCTION (4)** Learning principles and their application to classroom instruction. (PR: CI)
- EDF 6217 BEHAVIOR THEORY AND CLASSROOM LEARNING (4)** Theory and practical applications of behavior modification; introduction to experimental methods for behavior modification; operant methods in behavior and development; analysis and field work. (PR: EDF 6215 or CI)
- EDF 6281 WORKSHOP AND CONFERENCE DESIGN (3)** Knowledge and skills to design, conduct and/or administer, and evaluate both workshops and conferences. (PR: CI)
- EDF 6288 INSTRUCTIONAL DESIGN I (3)** Instructional design models/theories and their systematic application to instructional goals. (PR: EDF 6215 or CI)
- EDF 6354 THEORIES OF PERSONALITY FOR COUNSELORS (4)** Survey and analysis of major personality theories with emphasis on psycho-social and cognitive development throughout a person's life span.
- EDF 7143 MEASUREMENT OF COGNITIVE FUNCTIONING IN CHILDHOOD AND ADOLESCENCE (4)** Investigation of theories and measurement of cognitive functioning in childhood and adolescence. (PR: A course in measurement and CI)
- EDF 7244 COGNITIVE ISSUES IN INSTRUCTION (4)** Selected cognitive models of intelligence, memory, problem solving, thinking, and motivation applied to instructional strategies. (PR: Admission to doctoral program and EDF 6215, or CI.)
- EDF 7980 DISSERTATION** Var. Rpt. (PR: Admission to Candidacy)

SOCIAL FOUNDATIONS

- EDF 5672 AMERICAN DEMOCRACY AND PUBLIC EDUCATION (3)** Interdependence of the public school and democracy in the United States.
- EDF 6517 HISTORICAL FOUNDATIONS OF AMERICAN EDUCATION (4)** History of the origins and development of American education, events, and movements that have shaped school policies and practices, and their relationship to contemporary developments.
- EDF 6520 EDUCATION IN WESTERN CIVILIZATION (4)** Educational ideas, institutions, practices and prominent theorists from the western tradition and their continuing influence. (PR: Basic course in western history or history of philosophy.)
- EDF 6544 PHILOSOPHICAL FOUNDATIONS OF AMERICAN EDUCATION (3)** Major philosophies of education relevant to an understanding of contemporary educational issues.

EDF 6606 SOCIO-ECONOMIC FOUNDATIONS OF AMERICAN EDUCATION (4) Socio-economic factors as they relate to the work of professional educators and the role of public education in American society.

EDF 6705 WOMEN AND EDUCATION (3) Course is designed to enable public school personnel, teachers, counselors, administrators, and other professionals to identify those aspects of public education that perpetuate sex role stereotyping. Emphasis will be placed on how the law and formal and informal affirmative action activities can be employed to correct sexism in schools.

EDF 6736 EDUCATION, COMMUNICATION, AND CHANGE (3) Developments in communication as a process of social change as it affects students, teachers, and traditional school arrangements. (PR: CI)

EDF 6765 SCHOOLS AND THE FUTURE (4) Estimates of future demands upon schools; critique of current paradigms, techniques, and literature.

EDF 6810 COMPARATIVE EDUCATION (3) Comparison of contemporary educational systems of selected countries with that of the United States.

EDF 6812 SEMINAR IN COMPARATIVE EDUCATION (4) Policies and practices in education in selected countries.

EDF 7586 CLASSICS IN EDUCATIONAL RESEARCH (4) Examination of the context, methods, and significance of selected research studies in education. (PR: GS; EDF 6517, EDF 6544, EDF 6606, or CI)

EDF 7649 ANALYSIS OF EDUCATIONAL ISSUES (3) Socio-cultural, historical, and axiological examination of selected issues in public education.

EDF 7655 ORGANIZATION DEVELOPMENT IN EDUCATIONAL INSTITUTIONS (4) Application of social and behavioral science theory to the organizational and developmental problems of schools and school systems. (PR: EDF 6517, EDF 6544, EDF 6606, or CI)

EDF 7682 EDUCATION IN METROPOLITAN AREAS (4) Modern public education and its relationship to national development. (PR: EDF 6517, EDF 6544, EDF 6606, or CI)

EDF 7934 SEMINAR IN SOCIAL FOUNDATIONS OF EDUCATION (4) Significant research on socio-cultural issues in Education. (PR: GS; EDF 6517, EDF 6544, or EDF 6606, or CI)

SCHOOL PSYCHOLOGY

SPS 6196 ASSESSMENT OF CHILD AND ADOLESCENT PERSONALITY (4) Conceptualizations of personality and personality assessment; perspectives of disturbed and disturbing behavior, and personality assessment measures. (PR: CI)

SPS 6197, 6198 PSYCHOEDUCATIONAL DIAGNOSIS AND PRESCRIPTION I, II (4,4) Content covers comprehensive diagnosis and prescription in school psychology, including critical reviews of relevant research literatures, the professional-client relationship, interviewing, client histories, pluralistic psychoeducational assessment, assessment of educational environments, synthesis and dissemination of diagnostic data, and referral procedures. Appropriate field experiences will be provided. This course must be taken during two consecutive semesters, and the grade will be awarded at the end of the sequence. (PR: Acceptance to graduate program in School Psychology)

SPS 6101 CHILD AND ADOLESCENT BEHAVIOR DISORDERS (4) Theoretical and empirical identification and understanding of children and adolescents with behavior disorders. Treatment issues as they relate to school psychological services. (PR: CI)

SPS 6700, 6701, 6702 PSYCHOEDUCATIONAL INTERVENTIONS WITH CHILDREN AND ADOLESCENTS I, II, III (4,4,4) Content covers psychoeducational interventions for school-referred children and adolescents specific to school psychological services. This is an integrated sequence of courses addressing educational and psychological (direct and indirect) interventions with topics also including consultative service delivery, the acceptability of

Education

classroom strategies, classroom and behavior management, and the synthesis of assessment data into effective interventions all within the referral context. Appropriate field experiences will be required for Intervention I and Intervention II; therefore, concurrent enrollment in the Intervention Practicum course for these two courses only is required. (PR: Acceptance to School Psychology Graduate Program or CI)

SPS 6806 DEVELOPMENTAL BASES OF DIVERSE BEHAVIORS (4) This course deals with some of the major social and educational policy concerns posed by developmental and cultural diversity in our society.

SPS 6936 GRADUATE SEMINAR IN SCHOOL PSYCHOLOGY (1-3) Seminars to explore current matters of professional concern in school psychology, such as trends, problems, legal and ethical issues, and empirical bases of techniques. Rpt. up to 9 hours with different subject matter. (PR: CI)

SPS 6940, 6941 PRACTICUM IN PSYCHOEDUCATIONAL INTERVENTIONS (1-4) Course provides practical experiences and implement skills discussed and acquired in the intervention courses within settings relevant to school psychology. Rpt. (PR: Concurrent enrollment in Psychoeducational Interventions with Children and Adolescents – I or II, or CI)

SPS 6943, 6944 PRACTICUM IN PSYCHOEDUCATIONAL ASSESSMENT (1-4) Course will provide opportunities to implement skills acquired in assessment courses. Concurrently with Psychoeducational Assessment (SPS 6197-98) or with CI. Rpt.

SPS 6971 THESIS: MASTERS/EDUCATIONAL SPECIALIST Var. Rpt.

SPS 7090 SUPERVISION PROCESSES IN SCHOOL PSYCHOLOGY (4) Theory, skills, and practice of supervision in school psychology. (PR: CI)

SPS 7197 ADVANCED PSYCHOEDUCATIONAL ASSESSMENT (4) Advanced topics and techniques in the comprehensive assessment of children and adolescents typically referred for school psychological services. Course may be repeated for credit with different subject matter. (PR: SPS 6197/98 and SPS 6934/6944, and CI)

SPS 7205 ADVANCED CONSULTATION PROCESSES IN SCHOOL PSYCHOLOGY (4) Advanced topics and techniques in consultation processes for advanced school psychologists. May be repeated for credit with different subject matter. (PR: EDF 6166, or CI)

SPS 7700 ADVANCED PSYCHOEDUCATIONAL INTERVENTIONS (4) Advanced topics and techniques in psychoeducational interventions for children and adolescents referred for school psychological services. Course may be repeated for credit with different content. (PR: SPS 6700/6701 and SPS 6940/6941, and CI)

SPS 7701 ADVANCED CHILD AND ADOLESCENT PSYCHOTHERAPY (4) Covers advanced topics and techniques in child and adolescent psychotherapy relevant to school psychological services. Course may be repeated for credit with different content. (PR: SPS 6702, or CI)

SPS 7936 ADVANCED SEMINAR IN SCHOOL PSYCHOLOGY (1-3) Exploration of current issues and trends in school psychology as it relates to research and professional practice. This course may be repeated up to 6 credit hours with different subject matter. (PR: CI)

SPS 7980 DISSERTATION Var. Rpt. (PR: Admission to Candidacy)

GENERAL

EDF 6906 INDEPENDENT STUDY: EDUCATIONAL FOUNDATIONS (1-6) Independent study in which students must have a contract with an instructor. Rpt. S/U.

EDF 6938 SELECTED TOPICS (1-4) Exploration and demonstration of knowledge in an area of special interest to the student and/or in an area for which the student needs to demonstrate a higher level of competence. Designed to fit the needs of each student.

EDF 6944 FIELD EXPERIENCE (1-4) Demonstrate skills in the practice of the student's specialty. Objectives will be defined by the needs of the individual student. (PR: CI)

EDF 7980 DISSERTATION Var. Rpt. (PR: Admission to Candidacy)

SECONDARY EDUCATION

Chairperson: J.H. Johnston; *Professors:* J.T. Bullock, C. Engel, J.H. Johnston, H.G. Karl, J.B. Kase-Polisini, B.K. Lichtenberg, D.R. Lichtenberg, D.J. Puglisi, B. Spector, H.E. Steiner, A. Troutman; *Associate Professors:* F. Bräit, P.V. Czyzewski, M.S. Holland, B.J. Kazanis, J.W. Levy, F.L. Prince; *Assistant Professors:* R.A. Austin, A. Barron, M. Chappell, B. Cruz, C. Feyten, J. Golub, J.F. Kaywell, D. Thompson, J. White.

MIDDLE GRADES EDUCATION

EDM 6622 CLIENT CENTERED MIDDLE SCHOOLS (3) Combination lecture/discussion/independent study course that examines in depth the current research on needs/characteristics of the early adolescent and its implications for both organization of the middle grade school and its delivery of curriculum and instruction. Majors Only.

EDM 6623 RESPONSIVE MIDDLE SCHOOL PROGRAMS (3) Combination lecture/discussion/individual study course that examines in depth the current research on both the interdisciplinary team/advisory concepts and how these organizational patterns can promote thinking skills and integration of subject matter throughout the curriculum. (PR: EDM 6622)

EDM 6624 EFFECTIVE INSTRUCTION FOR MIDDLE SCHOOLS (3) Combination lecture/discussion/individual study course that examines in depth the current research on both alternative instructional strategies and assessment practices that are successful with middle level students. (PR: EDM 6622 and EDM 6623)

EDM 6935 MIDDLE SCHOOL ISSUES SEMINAR (3) Combines discussion/individual study seminar modeling the advisory concept in a university setting and examining the current research on a variety of important trends/issues affecting middle level education.

ART EDUCATION

ARE 6262 MANAGEMENT DESIGN FOR ART INSTITUTIONS (3) Principles of administration and supervision of art programs in the school and art institutions.

ARE 6706 BASIS OF INQUIRY INTO ARTISTIC MIND (3) An in-depth study of the contemporary basis of inquiry into artistic mind including a multi-disciplined review of literature and research in art education. Includes a visual inquiry project.

ARE 6844 EXPERIENTIAL AND THEORETICAL BASIS OF ARTISTIC MIND (3) Experiential and theoretical explorations into past and contemporary philosophies and practices in art and art education.

ARE 6906 INDEPENDENT STUDY: ART EDUCATION (1-6) Independent study in which students must have a contract with an instructor. Rpt. S/U.

ARE 6944 FIELD WORK IN ART EDUCATION (1-4) For student with degree-seeking status. Supervised participation in activities related to art education in community centers, nonschool arts program, planned workshop and research.

ENGLISH EDUCATION

LAE 5932 SELECTED TOPICS IN THE TEACHING OF ENGLISH (3) Investigation of topics of special interest to the student and related to the teaching of English in the secondary school. Topics will be selected by the student in accordance with his particular goals and will be approved by the student's graduate adviser. (PR: Certification in English and/or Mass Communications and approval of graduate adviser)

LAE 6336 NEW PERSPECTIVES ON THE TEACHING OF LITERATURE IN SECONDARY SCHOOLS (3) Survey of recent investigation into adolescents' perception of and responses to literature and implications for organization and presentation of literature curricula. (PR: Certification in English or Mass Communications)

LAE 6345 TEACHING WRITTEN COMPOSITION (3) Techniques for motivating, guiding, correcting, and evaluating student writing.

Education

LAE 6637 CURRENT TRENDS IN SECONDARY ENGLISH EDUCATION (3) Curricular patterns and instructional practices in secondary English. (PR: LAE 4335 or LAE 4642 or Certification in English or Mass Communications)

LAE 6644 CURRENT TEACHING OF THE ENGLISH LANGUAGE (3) Application of recent techniques of language study to classroom teaching of English, especially in relation to current textbooks. (PR: Certification in English or Mass Communications)

LAE 6971 THESIS: MASTERS/EDUCATIONAL SPECIALIST Var. Rpt.

FOREIGN LANGUAGE EDUCATION

FLE 6665 CURRENT TRENDS IN SECONDARY FOREIGN LANGUAGE EDUCATION (3) Designed for experienced classroom teachers, theoretical and practical implications of recent programs and methodology. Instructional practices in the teaching of foreign languages. Individual projects. (PR: FLE 4332/4333 or teaching experience. Fluency in the target language and in English.)

INSTRUCTIONAL TECHNOLOGY

CGS 6210 MICROCOMPUTER HARDWARE SYSTEMS FOR EDUCATION (3) The purpose is to develop individuals who have an understanding of microcomputer hardware that allows them to teach as well as make decisions concerning purchase, repair, and appropriate use. Topics include: basic concepts of digital electronics, the operation of a digital computer system, major categories of computer peripherals, historical development of electronic computers, and selection and maintenance of computers in an educational setting.

EDF 6284 PROBLEMS IN INSTRUCTIONAL DESIGN FOR MICRO COMPUTERS (3) The purpose is to develop individuals who can more effectively design, produce, and evaluate instructional software. The objectives are developed through the application of instructional design principles to the creation of software using high level courseware development languages. (PR: EME 4402 or EME 5403 or CI)

EME 5403 MICROCOMPUTERS IN EDUCATION (3) A survey course designed to introduce practicing teachers to microcomputer technology and its function in the classroom to augment the teaching and learning processes. Objectives include the use and evaluation of educational software, classroom use of computers, instructional computing research, generic applications software (word processors, database managers, etc.), programming, disk operating systems, and microcomputer hardware.

EME 6412 PROGRAMMING LANGUAGES FOR EDUCATION (3) Development of concepts, strategies, and materials for using programming languages in educational settings. Separate sections will focus on different programming languages such as LOGO, BASIC, Hyperscripting, Pascal, Advanced Pascal. (PR: EME 4402 or EME 5403 or CI)

EME 6425 MICROCOMPUTERS FOR SCHOOL MANAGEMENT (3) This course provides information and skills necessary for administrators and teachers to effectively use the computer and application software to manage information. Students use programs such as word processors, database managers, and spreadsheets to facilitate management tasks at the school and classroom level. In addition, general computer education topics are covered which provide for the computer literacy of school administrators.

EME 6426 APPLICATIONS OF COMPUTERS AS EDUCATIONAL TOOLS (3) Selected topics in the application of computing and related technology to the teaching and learning processes. Separate sections will focus on topics such as graphical user interface environments, image and sound processing, interactive media, artificial intelligence, data acquisition, and information systems. (PR: EME 4402 or EME 5403 or CI)

MATHEMATICS EDUCATION

MAE 6136 CURRENT TRENDS IN SECONDARY MATHEMATICS EDUCATION (3) Curricular patterns and instructional practices in secondary mathematics. (PR: MAE 4330 or CI)

MAE 6337 TOPICS IN TEACHING ALGEBRA (1-4) Topics in algebra, philosophy, new trends, and methods of teaching secondary school algebra. Rpt. up to 4 hours. (PR: Undergraduate degree in mathematics or certification in secondary school mathematics)

MAE 6338 TOPICS IN TEACHING GEOMETRY (1-4) Topics in geometry, philosophy, new trends, and methods of teaching secondary school geometry. Rpt. up to 4 hours. (PR: Undergraduate degree in mathematics or certification in secondary school mathematics)

MAE 6356 TEACHING OF PRE-SECONDARY SCHOOL MATHEMATICS (3) Development of strategies and materials for teaching mathematical concepts and skills appropriate to pre-secondary school years. Rpt. up to 9 hours. (PR: 12 hours of mathematics or CI)

MAE 6735 UNDERSTANDING MATHEMATICS, SCIENCE, AND TECHNOLOGY: HUMAN ENTERPRISES (3) Science, mathematics, and technology are presented as one multifaceted, dynamic, human-made enterprise responding to human beings' search for an understanding of the realities of the world. May be taken as SCE 6761. (PR: Advanced GS or CI)

MAE 6736 RESEARCH IMPLICATIONS FOR TEACHING PRE-COLLEGE MATHEMATICS AND SCIENCE (3) The conduct of research in mathematics, science, and technology is matched to appropriate research paradigms. May be taken as SCE 6736. (PR: Advanced GS or CI)

MAE 6737 TECHNOLOGY: SOLVING SOCIETAL PROBLEMS (3) Specific examples of mathematics/science/technology/society interaction are provided for integration into school based mathematics and natural science courses. May be taken as SCE 6737. (PR: Advanced GS or CI)

MAE 6738 MATHEMATICS AND SCIENCE EDUCATION POLICY, CHANGE, AND SCHOOL IMPROVEMENT (3) Research into school improvement initiatives in precollege mathematics and science is investigated and original studies are conducted. May also be taken as SCE 6738. (PR: EDF 7655 and Advanced GS or CI)

MAE 6971 THESIS: MASTERS/EDUCATIONAL SPECIALIST Var. Rpt.

MAE 7980 DISSERTATION Var. Rpt. (PR: Admission to Candidacy)

SCIENCE EDUCATION

SCE 5937 SELECTED TOPICS IN SCIENCE EDUCATION (1-4) Rpt. when topics are not duplicated.

SCE 6634 CURRENT TRENDS IN SECONDARY SCIENCE EDUCATION (3) Curricular patterns and instructional practices in secondary science. (PR: Bachelor's degree with major in science area, and certification in secondary science, or CC)

SCE 6736 RESEARCH IMPLICATIONS FOR TEACHING PRE-COLLEGE MATHEMATICS AND SCIENCE (3) The conduct of research in mathematics, science, and technology is matched to appropriate research paradigms. May also be taken as MAE 6736. (PR: Advanced GS or CI)

SCE 6737 TECHNOLOGY: SOLVING SOCIETAL PROBLEMS (3) Specific examples of mathematics/science/technology/society interaction are provided for integration into school-based mathematics and natural science courses. May also be taken as MAE 6737. (PR: Advanced GS or CI)

SCE 6738 MATHEMATICS AND SCIENCE EDUCATION POLICY, CHANGE, AND SCHOOL IMPROVEMENT (3) Research into school improvement initiatives in precollege mathematics and science is investigated and original studies are conducted. May also be taken as MAE 6738. (PR: EDF 7655 and Advanced GS or CI)

SCE 6761 UNDERSTANDING MATHEMATICS, SCIENCE, AND TECHNOLOGY: HUMAN ENTERPRISES (3) Science, mathematics, and technology are presented as one multifaceted, dynamic, human-made enterprise responding to man's search for an understanding of the realities of the world. May also be taken as MAE 6735. (PR: Advanced GS or CI)

SCE 6971 THESIS: MASTERS/EDUCATIONAL SPECIALIST Var. Rpt.

Education

SCE 7641 PROGRAMS AND RESEARCH IN EARTH SCIENCE EDUCATION (3) A study of curricula, issues, and research in Earth Science Education, grades K-12. Also included are the study and application of: (1) skills for assisting pre- and in-service school personnel with Earth Science instruction and (2) skills for developing Earth Science curricula. (PR: Master's degree or equiv. in Science Education or CC)

SCE 7642 PROGRAMS AND RESEARCH IN LIFE SCIENCES EDUCATION (3) A study of curricula, issues, and research in Life Science Education, grades K-12. Also included are the study and application of: (1) skills for assisting pre- and in-service school personnel with Life Science instruction and (2) skills for developing Life Science curricula. (PR: Master's degree or equiv. in Science Education or CC)

SCE 7643 PROGRAMS AND RESEARCH IN PHYSICAL SCIENCE EDUCATION (3) A study of curricula, issues, and research in Physical Science Education, grades K-12. Also included are the study and application of: (1) skills for assisting pre- and in-service school personnel with Physical Science instruction and (2) skills for developing Physical Science curricula. (PR: Master's degree or equiv. in Science Education or CC)

SCE 7980 DISSERTATION Var. Rpt. (PR: Admission to Candidacy)

SOCIAL SCIENCE EDUCATION

SSE 5644 ECONOMIC DECISION-MAKING FOR TEACHERS (3) Provides teachers (K-12) with content related to the operation of businesses in a market economy. Teachers analyze economic/business concepts from the perspective of individuals currently operating businesses in the Tampa Bay area. Focus of the instruction is on the application of content to K-12 instructional programs. (PR: Admission to College of Education or CC)

SSE 6636 CURRENT TRENDS IN SECONDARY SOCIAL STUDIES (3) Curricular patterns and instructional practices in Secondary Social Studies. (PR: SSE 4333 or equiv. or CC)

SSE 6640 ECONOMIC EDUCATION FOR TEACHERS (3) This course is designed to provide teachers with content knowledge, curriculum development experience, and exposure to teaching strategies in economic education K-12.

THEATRE EDUCATION

See Fine Arts for descriptions of THE 5909, THE 5931, and THE 6736

EDG 6329 CREATIVE DRAMA IN A DEVELOPMENTAL CONTEXT (3) Theories and methods of applying three major approaches of creative drama to the use of improvised drama from kindergarten through secondary school. The course will involve students in applying the drama process as a teaching method which can be applied by classroom teachers of elementary, middle and high school.

EDG 6456 METHODS OF DIRECTING THE HIGH SCHOOL PLAY (3) Directing the high school play including script selection, analysis and interpretation, audition and casting procedures, composition, picturization, staging movement, rhythm and pacing, pantomimic dramatization, organizing and conducting rehearsals.

EDG 6457 CURRENT TRENDS IN SECONDARY THEATRE EDUCATION (3) A study of curricular patterns and instructional practices in secondary theatre education, including methods of teaching theatre aesthetics through the study of great plays and their production.

EDG 6458 SELECTED TOPICS IN THE TEACHING OF THEATRE (3) Investigation of topics related to theatre teaching of special interest to the student. Topics will be selected by the student and approved by the graduate adviser. S/U. (PR: Open only to students who have completed all other graduate level Theatre Education courses)

GENERAL

ESE 6906 INDEPENDENT STUDY: SECONDARY EDUCATION (1-6) Independent study in which students must have a contract with an instructor. Rpt. S/U.

SPECIAL EDUCATION

Chairperson: J.L. Paul; *Professors:* L. Bowers, A. Duchnowski, E. Guetzloe, S. Klesius, K. Marfo, A.J. Mauser, J.L. Paul, S.P. Singh; *Associate Professors:* B.C. Epanchin, D. Evans, C.D. Lavelly, H.A. Sproles; *Assistant Professors:* A. Cranston-Gingras, D. Harris, L. Smith, K. Stoddard, D. Thomas, B. Townsend; *Senior Research Scholars:* W.C. Morse, W.C. Rhodes; *Visiting Instructors:* M.S. Rennells, H. Rosselli.

EED 6201 ADVANCED THEORIES AND PRACTICES IN BEHAVIOR DISORDERS (3) In-depth study of specific behavioral disorders of children and youth, with an emphasis on educational implications and interventions. (Fall Semester)

EED 6211 EDUCATIONAL STRATEGIES FOR STUDENTS WITH BEHAVIOR DISORDERS (3) Advanced methods and materials for planning, implementing, and evaluating educational interventions with students with behavior disorders. (PR: EED 6201 or equiv. or CI) (For certification)

EED 6246 EDUCATING THE AUTISTIC STUDENT (3) Developing and managing appropriate and effective educational programs and techniques with autistic students. (PR: GS, introductory course in Educating Exceptional Students; Psycho-educational Assessment) (Spring)

EED 6943 SUPERVISED PRACTICUM IN BEHAVIOR DISORDERS (3) Supervised graduate practicum experiences with behavior disordered children. For students seeking certification only. S/U. (PR: EED 6201 - may be taken concurrently, or CI)

EEX 5705 SEMINAR IN PRESCHOOL HANDICAPPED (2) Intended to familiarize the education student with the wide range of needs and services of the preschool handicapped child and their families and how they coordinate with educational services. (Fall, Spring)

EEX 5752 WORKING WITH FAMILIES: A PLURALISTIC PERSPECTIVE (3) The impact of the socio/cultural environment on the education of at-risk and handicapped children; family systems theory, principles of multi-cultural education, strategies for working effectively with families of school-age children, diverse cultures and family structures represented in school populations today. (PR: GS or CI) (Spring)

EEX 6025 FOUNDATIONS OF SPECIAL EDUCATION (3) Survey of all exceptionalities including current trends and issues related to the field of special education. (Fall)

EEX 6222 ADVANCED PSYCHOEDUCATIONAL ASSESSMENT OF EXCEPTIONAL STUDENTS (3) Theory and methodology associated with norm-referenced, criterion-referenced, curriculum-based, ecological, and psychoneurological assessment procedures for exceptional students. (PR: GS, introductory courses in exceptional student education and educational assessment)

EEX 6245 TRANSITIONAL PROGRAMMING FOR THE ADOLESCENT AND YOUNG ADULT EXCEPTIONAL STUDENT (3) Procedures in implementing educational programs for the exceptional adolescent. Includes educational programming, alternative programs, community resource coordination, career/occupational education, and advocacy. (PR: GS, introductory course in educating exceptional students) (Spring)

EEX 6248 INSTRUCTIONAL APPROACHES FOR EXCEPTIONAL POPULATIONS (3) In-depth study of methodology for curriculum adaptation; IEP development; direct, data-based and metacognitive strategy instruction; and micro-computer applications for students with emotional disturbance, mental retardation, and learning disabilities. (PR: GS or CI) (Spring)

EEX 6511 ADMINISTRATION OF EXCEPTIONAL STUDENT PROGRAMS (3) Procedures that local, state, and national administrators may use to implement services for exceptional students. (PR: CI) (Fall)

EEX 6526 GRANTSMANSHIP (3) Fundamental skills for obtaining external funding of training, service, and research projects in education and the social sciences. Includes locating and communicating with sponsors, developing proposals, and preparing budgets. Emphasis is on grantsmanship in an academic environment. (PR: Advanced GS or CI) (Spring)

Education

- EEX 6616 MANAGEMENT AND MOTIVATIONAL STRATEGIES FOR DISRUPTIVE AND DISTURBED STUDENTS (3)** Focuses on approaches to classroom management and motivational strategies when working with exceptional students. Content includes applied behavior analysis techniques, psychoeducational approaches, and social skills training. Available to non-majors. (PR: GS) (Spring)
- EEX 6706 EDUCATION OF THE PRESCHOOL HANDICAPPED CHILD (3)** Education of children ages birth through five with special needs. Basic concepts, curricular intervention strategies, and organizational structures are covered. (PR: CI) (Fall)
- EEX 6732 CONSULTATION AND COLLABORATION IN SPECIAL EDUCATION (3)** Theories of consultation and collaboration. Overview of service delivery models in special education. (PR: Introductory course in special education, GS or CI) (Fall)
- EEX 6906 INDEPENDENT STUDY: SPECIAL EDUCATION (1-6)** Independent study in which students must have a contract with an instructor. Rpt. S/U.
- EEX 6936 SEMINAR IN INTEGRATING EXCEPTIONAL STUDENTS IN REGULAR EDUCATIONAL ENVIRONMENTS (3)** Designed for non-special education graduate students. Surveys the characteristics of exceptional student populations, identification procedures, and systems for providing appropriate services for "mainstreamed" student in academic and non-academic settings. (Fall)
- EEX 6939 ADVANCED SEMINAR: PARADIGMS, PRACTICES, AND POLICIES IN SPECIAL EDUCATION (3)** An advanced graduate seminar stressing crosscategorical relationships. Topics include research that deals with paradigms for providing service, service models, and legal mandates. (PR: Students should be in the last semester of coursework for master's degree.) (Spring)
- EEX 6943 PRACTICUM IN EXCEPTIONAL STUDENT EDUCATION (1-4)** Supervised field work in exceptional student education with children (including preschool handicapped) who are learning disabled, mentally handicapped, emotionally handicapped, physically disabled, or multihandicapped. Rpt. up to 12 hours. S/U. (PR: Admission to Master's Degree Program in Special Education and C)
- EEX 6971 THESIS: MASTERS/EDUCATIONAL SPECIALIST** Var. Rpt.
- EEX 7203 EDUCATIONAL IMPLICATIONS OF PSYCHOSOCIAL ASPECTS OF EXCEPTIONAL CHILDREN (1-5)** This course will be concerned with the identification of the psycho-social needs and characteristics of exceptional children; opportunity of analysis of the educational implications of these needs and characteristics. Rpt. up to 5 hours. (PR: CI)
- EEX 7301 SELECTED TOPICS IN SPECIAL EDUCATION (1-8)** Identification and specifications of a research problem in special education. Opportunity will be provided for the student to gather and process data, culminating in a written report and/or oral presentation to fellow student researchers. Rpt. up to 8 hours. (PR: EEX 7341 or CI)
- EEX 7341 RESEARCH STUDIES AND THEIR IMPLICATIONS IN THE EDUCATION OF EXCEPTIONAL CHILDREN (3)** This course will involve a study of current research in exceptional child education. The transition from theory to practice will be made through the examination and discussion of implications in the field of special education that can be drawn from the research. (PR: EDF 6431, EDF 6481, or equiv., CI)
- EEX 7741 PHILOSOPHY AND THEORY IN THE PREPARATION OF SPECIAL EDUCATION SPECIALISTS (3)** In-depth exploration of the philosophy and theory in special education. A theoretical basis for the preparation of specialists in the field of exceptional child education. (PR: Admission in the Program for Ed.S. or Ph.D. in Education)
- EEX 7841 FIELDWORK WITH EXCEPTIONAL STUDENTS (1-5)** Practical field experience in curriculum development, classroom teaching, supervision, and/or administrative areas in special education. Rpt. up to 5 hours. (PR: CI)

- EEX 7911 SPECIALIZED STUDY IN: MENTAL RETARDATION, BEHAVIOR DISORDERS, SPECIFIC LEARNING DISABILITIES, AND GIFTED EDUCATION** The specialized study enables advanced exploration of knowledge in an area of interest to the student in special education. May be repeated for a maximum of 8 hours. (PR: C)
- EEX 7980 DISSERTATION** Var. Rpt. (PR: Admission to Candidacy)
- EGI 5051 NATURE AND NEEDS OF THE GIFTED (3)** Characteristics and educational needs of gifted children and youth. Emphasis is on five types of giftedness as defined by National Department of Education (1) intellectual giftedness, (2) specific academic aptitude, (3) visual and performing arts, (4) leadership, and (5) kinesthetic. (Fall)
- EGI 5325 CREATIVE PROBLEM SOLVING FOR THE CHILD (3)** Exploration of the concept of creativity, its factors, measurement, and application to education. Opportunities are given to work with children in a laboratory setting and to prepare materials to be used with small groups of children. (Spring)
- EGI 6232 ADVANCED EDUCATIONAL STRATEGIES FOR THE GIFTED (3)** Curriculum adjustments, methods and techniques, and classroom organizations necessary for teaching the gifted. Emphasis will be on the examination of various theoretical models and how these can be utilized to develop appropriate programs for the gifted. (PR: EGI 5051) (Spring)
- EGI 6416 CONSULTATION, COUNSELING, AND GUIDANCE SKILLS FOR GIFTED STUDENTS (3)** Counseling techniques appropriate for the gifted and talented will be explored and experienced. Primary emphasis of the course will be to provide opportunities for classroom teachers to develop awareness, knowledge, and understanding of the unique guidance counseling needs of gifted and talented children and their parents. (PR: EGI 5051 or C) (Summer)
- EGI 6936 SEMINAR IN EDUCATION OF THE GIFTED: RECENT RESEARCH (3)** A critical survey of the literature related to the psychological and educational problems of gifted children. (Fall)
- EGI 6943 SUPERVISED PRACTICUM FOR THE GIFTED (3)** Planned supervised participation in activities related to specific areas of the gifted.
- ELD 6015 ADVANCED THEORIES AND PRACTICES IN SPECIFIC LEARNING DISABILITIES (3)** Various conceptual and/or theoretical models are reviewed; current trends and issues related to education of children with specific learning disabilities. (PR: Introductory course in exceptional child education, GS) (Fall)
- ELD 6235 EDUCATIONAL STRATEGIES FOR STUDENT WITH SPECIFIC LEARNING DISABILITIES (3)** Advanced educational procedures and materials development for the student with specific learning disabilities. (PR: ELD 6015, EEX 6222) (For certification)
- ELD 6943 PRACTICUM WITH LEARNING DISABILITIES (1-12)** Supervised experiences with children who have learning disabilities. S/U.
- EMR 6052 ADVANCED THEORIES AND PRACTICES IN MENTAL RETARDATION (3)** In-depth study of the complex social and biological aspects of mental retardation with particular reference to effects on education. (PR: GS; introductory course in exceptional student education) (Fall)
- EMR 6303 EDUCATIONAL STRATEGIES FOR THE MENTALLY RETARDED (3)** In-depth study of the specific curriculum and methodological problems in teaching the retarded. (For certification)
- EMR 6943 GRADUATE SUPERVISED PRACTICUM IN MENTAL RETARDATION (1-12)** Supervised graduate practicum encompassing teaching and supervising experiences in public school classes for the mentally retarded. For students seeking certification only.
- EPH 5051 ADVANCED THEORIES IN MOTOR AND PHYSICAL DISABILITIES (3)** Biological and functional aspects of motor and physical health disabilities, including dysfunctions in

central nervous system covering motor, sensory, language, and psychological disorders. (PR: EEX 3010 or CI)

EPH 5321 EDUCATIONAL STRATEGIES FOR PHYSICALLY AND MULTI-HANDICAPPED STUDENTS (3) Educational management of student with cerebral palsy, motor disabilities, and multi-handicapped conditions, including rehabilitation and other community services. (PR: EPH 5051)

EPH 6943 SUPERVISED PRACTICUM IN MOTOR DISABILITIES (1-12) Supervised graduate practicum encompassing teaching and supervising experiences in public/private educational or vocational programs for physically handicapped in the classroom, hygiene, and educational implications. For students seeking certification only. (PR: EEX 3010 or CI)

College Of Engineering

BASIC AND INTERDISCIPLINARY ENGINEERING

CGN 6405 NUMERICAL METHODS IN ENGINEERING ANALYSIS (3) Application of computational and mathematical techniques and principles to advanced engineering problems. (PR: EGN 4420)

EGN 5422 ENGINEERING ANALYSIS II (3) Power series solutions for ordinary differential equations, Sturm-Liouville theory, special functions. Vector methods with generalized coordinates. Separation of variables for partial differential equations. Green's functions. Calculus of variations. Numerical methods. (PR: MAP 4302 or CC)

EGN 5423 ENGINEERING ANALYSIS III (3) Finite fields and coding applications. Probabilities of error detection and correction. Advanced matrix algorithms: LU and QR factorizations, least-squares, pseudoinverses. (PR: EGN 4450 or CC)

EGN 5424 ENGINEERING ANALYSIS IV (3) Analytic functions, conformal mapping, residue theory, Laurent series, transforms. Applications to various problems in engineering and physics. (PR: MAP 4302 or CC)

EGN 5425 ENGINEERING ANALYSIS V (3) Survey of theory and software for matrix computations: factorization methods, least squares and pseudoinverses, eigenvector algorithms. Special matrices and representations for control system and finite element applications. (PR: EGN 4450 and MAP 4302, or CC)

ESI 6247 STATISTICAL DESIGN MODELS (3) Design of experimental mathematical models. Application of advanced analysis of variance techniques as applied to industrial problems. (PR: ESI 5219 or equiv.)

CHEMICAL ENGINEERING

Chairperson: C.A. Smith; *Professors:* J.C. Busot, L.H. Garcia-Rubio, J.A. Llewellyn, C.A. Smith, A.K. Sunol; *Associate Professors:* S.W. Campbell, R. Gilbert, W.E. Lee; *Assistant Professors:* V. Bhethanabolla; *Courtesy Appointments:* R.S. Braman, J.E. Fernandez, K.B. Seifert.

ECH 5158C SEMINAR IN THE PHILOSOPHY OF THERMODYNAMICS (2) Philosophical and technical aspects of contemporary thermodynamics, including entropy, time, irreversible processes, complex structures, and analysis of biological systems. Includes topics in the philosophy of science. Open to non-majors.

ECH 5285 TRANSPORT PHENOMENA (3) Basic descriptive equations of fluid, heat, and mass transport. Description and solution to intermediate problems, including unsteady state and multidimensional systems. Estimation of transport and convective coefficients. (PR: Senior or GS in Engineering)

ECH 5314 AUTOMATIC PROCESS CONTROL II (3) Root Locus and Frequency Response Methods. Ration, Cascade, Feedforward, Selective, Override and Multivariable Control. Z-transforms and discrete controllers including PID, Dahlin and dead time compensation. 2 hrs lec., 3 hrs. lab/week. (PR: ECH 4314 or CI)

ECH 5740 THEORY AND DESIGN OF BIOPROCESSES (4)

ECH 5742 PHARMACEUTICAL ENGINEERING (2) Introduction to pharmaceutical engineering, including dosage forms (tablets, capsules, powders, liquids, topical forms, and aerosols), excipients, regulatory issues, clinical studies, and good manufacturing practices. (PR: Senior or GS in Engineering or CI).

ECH 5746 INTRODUCTION TO BIOMEDICAL ENGINEERING (3) Introduction to biomedical engineering, including transport phenomena in biomedical systems, biomaterials, biomedical instrumentation, prosthetic devices, and clinical engineering. Open to non-majors.

ECH 5748 SELECTED TOPICS IN BIOMEDICAL ENGINEERING (1-3) Selected topics in biomedical engineering, including biomedical engineering, biomedical materials, biodynamics of circulation, separation processes in biomedical systems, and artificial organ systems. May be taken by non-engineering students with CI. Rpt. as subjects vary.

ECH 5820 PRODUCT DEVELOPMENT (2) Introduction to the development of consumer products, including the history of innovation, creativity development, the product development environment, and a detailed examination of several product areas. (PR: Senior or GS in Engineering or CI)

ECH 5910 DIRECTED RESEARCH IN BIOENGINEERING (1-3) Directed research in an area of biomedical engineering or engineering biotechnology. (PR: CI)

ECH 5930 VARIABLE TITLE (1-4) (PR: CC)

ECH 5931 VARIABLE TITLE (1-4) (PR: CC)

ECH 6105 ADVANCED THERMODYNAMICS I (3) Selected topics in classical and irreversible thermodynamics. (PR: CC)

ECH 6107 SELECTED TOPICS IN ADVANCED THERMODYNAMICS (3) Advanced selected topics in Ch.E. Thermodynamics such as; molecular and statistical thermo, adv. phase and chemical equilibria, etc. (PR: GS or CI)

ECH 6220 ADVANCED MASS TRANSFER (3) Advanced topics in mass transfer, including the mathematical description and solution of homogeneous and heterogeneous reacting systems, unsteady state, simultaneous heat and/or fluid transfer, particulate processes, and interfacial transport. (PR: ECH 5285 or equiv.)

ECH 6412 PROCESSES ANALYSIS AND MODELING (3) Computer-controlled data acquisition and analysis aimed at development and evaluation of empirical and physical models of chemical and mechanical engineering processes. (PR: CI)

ECH 6515 REACTING SYSTEMS (3) Economic factors in the design of chemical reactors. Simulation of complex reacting systems. (PR: ECH 4415 or CI)

ECH 6616 COMPUTER-AIDED PROCESS ENGINEERING I (3) Plant and process design with emphasis on computer-aided design. (PR: ECH 4615)

ECH 6745 BIOMATERIALS AND BIOCOMPATIBILITY (3) Physical and chemical properties of biomaterials, failure mechanisms, performance in vivo, interfacial phenomena and biocompatibility, including host response to implants. Also will discuss the regulatory aspects of biomaterials. (PR: CI)

ECH 6906 DIRECTED RESEARCH Var: Rpt. S/U. (PR: GR. ML)

ECH 6907 INDEPENDENT STUDY - VARIABLE TITLE Var. Independent study in which students must have a contract with an instructor. Rpt. S/U. (PR: GR)

ECH 6930 VARIABLE TITLE (1-3) (PR: CC)

ECH 6931 VARIABLE TITLE (1-3) (PR: CC)

Engineering

ECH 6938 GRADUATE INSTRUCTION METHODS (1-4) Special course to be used for training of graduate teaching assistants. Var. Rpt. to a total of 4 hours. S/U. (PR: CC)

ECH 6939 GRADUATE RESEARCH METHODS (1-4) Special course to be used for training of graduate research assistants. Var. Rpt. to a total of 4 hours. S/U. (PR:CC)

ECH 6971 THESIS: MASTER'S Var. (PR: CC)

ECH 7915 DIRECTED RESEARCH Var. GR Ph.D. level. Rpt. S/U. (PR: CC)

ECH 7980 DISSERTATION: DOCTORAL Var. (PR: Admission to Candidacy)

EML 6120C NUMERICAL METHODS IN HEAT TRANSFER (3) Application of finite difference and finite element techniques to problems of conduction and convection, Cartesian, cylindrical and spherical systems. Steady and transient solutions. (PR: C)

EML 6121C ADVANCED CONDUCTION ANALYSIS (3) Multi-dimensional heat transfer. Emphasis on solution techniques, exact and numerical. (PR: C)

EML 6122 RADIATION (3) Review of basic principles of radiation, grey bodies and real surfaces, calculation of shape factors, absorbing gases. (PR: C)

EMC 6317 DIRECT DIGITAL CONTROL I (3) Application of digital computers to control of engineering processes. Includes study of digital filtering, Z-transforms, supervisory control, A/C and D/C conversion and advanced control strategies. (PR: C)

EMC 6318 DIRECT DIGITAL CONTROL II (3) A continuation of EMC 6317 with detailed study of special cases. Cases will vary from term to term. (PR: C)

EML 5395 MOTOR SELECTION AND CONTROL (3) Standard electrical voltages; power wiring in industrial plants; NEMA motor designs and their uses; techniques for estimating motor starting times and temperature rise; motor selection; starting and operating safety interlocks; conventional starting and control systems; programmable controllers; electrical code requirements for conductors and protective devices. (PR: ENG 3373, EGN 3433)

CIVIL ENGINEERING AND MECHANICS

Chairperson: W.F. Echelberger, Jr.; *Professor Emeritus:* B.E. Ross; *Professors:* M.W. Anderson, R.P. Carnahan, W.C. Carpenter, W.F. Echelberger, Jr., J.E. Griffith, S.C. Kranc, L. Oline, A. Sagues; *Associate Professors:* A.R. Kaub, R.J. Murphy, J. Ratliff, R. Sen, R.I. Stessel; *Assistant Professors:* J.F. Devine, J.T. Franques, M. Gunaratne, R.O. Mines, Jr., M.A. Ross, A. Zayed; *Courtesy Appointments:* G.L. Brosch, F.R. Jones, E.F. Kalmaz, T.L. Miller, S.E. Polzin, J.B. Rose, F.L. Young.

CEG 5115 FOUNDATION ENGINEERING (3) Design of shallow foundations, cantilevered and anchored retaining walls, piling, drilled piers and special foundations. Computer applications to geotechnical engineering are covered. (PR: CEG 4011 or C)

CEG 5205 LABORATORY TESTING FOR GEOTECHNICAL ENGINEERS (3) Both routine and advanced forms of soil testing are covered. Emphasis is placed on procedures and application of results to design. (PR: CEG 4011 or C)

CEG 6415 SEEPAGE AND SUBSURFACE DRAINAGE (3) Design of underdrains, wells, soil filters, fabric filters, and dewatering systems with special emphasis on case studies. (PR: CEG 4011 or C)

CES 5104C ADVANCED MECHANICS OF MATERIALS I (3) Analytical study of the mechanical behavior of deformable solids. Basic concepts, stress and strain transformations, special topics in beams, introduction to theories of elasticity, and bending of thin plates. (PR: EGN 3331, MAP 4302)

CES 5209 STRUCTURAL DYNAMICS (3) Behavior of structural components and systems when subjected to periodic dynamic loads. (PR: CES 4001)

- CES 5715C PRESTRESSED CONCRETE (3)** Fundamental principles of prestressing; calculation of losses; stress analysis and design of simple beams for flexure and shear. Examples of prestress applications. (PR: CI)
- CES 6107C ADVANCED MECHANICS OF MATERIALS II (3)** Continuation of CES 5105C. Energy methods, membrane shell theory, introduction to theories of plasticity, limit analysis and design, elastic and plastic buckling of columns. (PR: CES 5105C)
- CES 6116 FINITE ELEMENT METHODS I (3)** Finite element methods in solid mechanics. Applications to beams, frames, trusses, and plane stress and plane strain problems. Theory and computer modeling are covered. (PR: CI)
- CES 6117 FINITE ELEMENT METHODS II (3)** Finite element methods in continuum mechanics. Theory and computer modeling of linear and non-linear problems are covered. Topics include large deflection problems, plasticity, creep, heat transfer, plates and shells, stability and dynamics. (PR: CES 6116)
- CES 6218 STRUCTURAL STABILITY (3)** Elastic and inelastic stability of trusses and frames, local buckling of structural members and plates. (PR: CES 4141, CES 6209)
- CES 6326 DESIGN OF CONCRETE BRIDGES (3)** Bridge Classification, AASHTO loads and load combinations, load distribution, design of typical superstructures and substructures for concrete and prestressed bridges. (PR: CES 4702, CES 5715)
- CES 6608 ADVANCED STRUCTURAL DESIGN I (3)** Advanced topics in steel design. Topics covered include load resistance factor design, and torsion of wide range sections.
- CES 6726 ADVANCED STRUCTURAL DESIGN II (3)** Advanced topics in concrete designs. Topics include torsion two way floor systems, composite construction, slabs on grade, and deep beams.
- CGN 5933 SPECIAL TOPICS IN CIVIL ENGINEERING AND MECHANICS (1-5)** New technical topics of interest to civil engineering students. Rpt. up to 6 hours. (PR: CI)
- CGN 6305 OPTIMIZATION TECHNIQUES IN CIVIL ENGINEERING (3)** Theory and application of optimization techniques to the planning, design and operation of civil engineering systems. (PR: CI)
- CGN 6405 NUMERICAL METHODS IN ENGINEERING ANALYSIS (3)** Application of computational and mathematical techniques and principles to advanced engineering problems. (PR: EGN 4420)
- CGN 6906 INDEPENDENT STUDY** Var. Independent study in which students must have a contract with an instructor. Rpt. S/U. (PR: CC)
- CGN 6915 DIRECTED RESEARCH** Var. Rpt. S/U. (PR: GR. M.L.)
- CGN 6933 SPECIAL TOPICS IN CIVIL ENGINEERING AND MECHANICS (1-4)** (PR: CC)
- CGN 6939 CIVIL ENGINEERING AND MECHANICS SEMINAR (1-4)** (PR: CC)
- CGN 6941 GRADUATE INSTRUCTION METHODS (1-5)** Special course to be used primarily for the training of graduate teaching assistants. Var. Rpt. to a total of 5 credits. S/U.
- CGN 6945 GRADUATE RESEARCH METHODS (1-5)** Special course to be used primarily for the training of graduate research assistants. Var. Rpt. to a total of 5 credits. S/U.
- CGN 6971 THESIS: MASTER'S** Var.
- CGN 7980 DISSERTATION DOCTORAL** Var. (PR: Admission to Candidacy)
- CGN 7915 DIRECTED RESEARCH** Var. Rpt. S/U. (PR: GR. Ph.D. level)
- CWR 6235 FREE SURFACE FLOW (3)** Fundamental and applied aspects of free surface flow, including river hydraulics, canal flow, and open channel design. (PR: CWR 4202 or CI)

Engineering

- CWR 6305 URBAN HYDROLOGY (3)** A study of the quantity and quality problems and solution techniques associated with urban runoff. (PR: CI)
- CWR 6535 HYDROLOGIC MODELS (3)** A study of the theoretical principles of hydrologic modeling and an examination of various numerical hydrologic models available. Students will be required to develop and apply computer models.
- CWR 6545 WATER RESOURCES SYSTEMS (3)** Planning, design, and operation of water resources by the use of systems analysis and operations research techniques. (PR: ENV 4622, CGN 6305)
- ECI 6206 COASTAL WAVES AND STRUCTURES (3)** Fundamentals of wave motion and the mutual interaction of waves and structures. A design project is included. (PR: CI)
- ECI 6207 WAVES AND BEACH PROTECTION (3)** A study of the fundamentals of shoreline dynamics including distribution of wave energy, motion of beach sand, stable configurations and protective measures. (PR: ECI 6206)
- ECI 6208 COASTAL AND ESTUARY MODELING (3)** Digital modeling of coastal and estuary systems, currents, tide heights, sediment transport, erosion, data collection, temperature distribution, sources and sinks. Special emphasis on Florida regions. (PR: CI)
- EES 6135 WATER QUALITY FOR ENGINEERS II (3)** Study of biochemical relations and processes in treatment of pollutants with emphasis on control of effluents for the protection of water quality. (PR: CI)
- EES 6215 WATER QUALITY FOR ENGINEERS I (3)** An introduction to the form, structure, and chemical activities of the important processes essential to treatment of domestic and industrial wastewater. (PR: CI)
- EGM 6611 CONTINUUM I (3)** Formulation of fundamental problems in solids and fluids from a unified viewpoint; application to ideal media; elastic, plastic, and fluids. (PR: CI)
- EGM 6656 THEORY OF ELASTICITY (3)** Classical and contemporary elasticity theory with applications to engineering problems. (PR: CES 6116)
- EGM 6796 PLATES AND SHELLS (3)** Elastic behavior of thin plate and shell structures. (PR: CI)
- EGM 6814 ADVANCED FLUID MECHANICS (3)** Formulation and analysis of problems in the flow of viscous and nonviscous fluids including Newtonian and non-Newtonian flows. Mathematical methods and techniques of solutions. (PR: CWR 4202)
- ENV 5105 AIR RESOURCE MANAGEMENT (3)** Air pollution source impacts on ambient air quality, modeling, regulatory approaches, source strategic controls and surveillance. (PR: CI)
- ENV 5345 SOLID AND HAZARDOUS WASTE CONTROL (3)** Introduction to solid and hazardous waste management; regulatory concepts, waste types and quantities, and waste collection. Disposal techniques, facility siting, volume reduction, landfill design, incineration and heat recovery, contaminant generation and transport, and remedial action. (PR: CI)
- ENV 5614 ENVIRONMENTAL RISK ANALYSIS (3)** Study of comprehensive application of risk analysis techniques for environmental control and protection purposes. (PR: CI)
- ENV 6347 SOLID AND HAZARDOUS WASTE PROCESSING AND TREATMENT (3)** Advanced management concepts including: thermal, chemical, and biological treatment, waste-to-energy, and resource recovery. (PR: ENV 5357 or CI)
- ENV 6438 URBAN WATER TREATMENT THEORY AND DESIGN (3)** A study of the theory of water treatment and the relation of theory to analysis and design practice. Emphasis is given to unit processes. The course is devoted to the design and analysis of specific water treatment facilities. (PR: ENV 4012 and CI)

ENV 6519 ADVANCED PHYSICAL/CHEMICAL PROCESSES (3) Theory and design of processes used in advanced water and wastewater treatment, including membrane processes, absorption, electrodialysis, ozonation, irradiation. (PR: CI)

ENV 6539 URBAN WASTEWATER TREATMENT THEORY AND DESIGN (3) A study of the theory of wastewater and the relation of theory to analysis and design practice. Emphasis is given to unit processes. The course is devoted to the design and analysis of specific wastewater treatment works. (PR: ENV 4012, CI)

ENV 6558 INDUSTRIAL AND HAZARDOUS WASTE TREATMENT (3) Industrial waste surveys; contemporary industrial wastewater treatment and control methods; characteristics of industrial wastes and their effects on receiving streams. (PR: ENV 5539 or CI)

COMPUTER SCIENCE AND ENGINEERING

Chairperson: A. Kandel; *Professors:* H. Glass, A. Kandel, M. Varanasi; *Associate Professors:* K. Bowyer, L. Hall, C. Naylor, R. Perez, D. Rundus; *Assistant Professors:* S. Al-Arian, D. Goldgof, P. Maurer, L. Pieggl, N. Ranganathan, L. Stark.

CAP 5400 DIGITAL IMAGE PROCESSING (3) Image formation, sources of image degradation, image enhancement techniques, edge detection operators and threshold selection, low-level processing algorithms for vision, image data compression. (PR: EEL 4851C or GS)

CAP 5600 INTRODUCTION TO ARTIFICIAL INTELLIGENCE (3) Basic concepts, tools, and techniques used to produce and study intelligent behavior. Organizing knowledge, exploiting constraints, searching spaces, understanding natural languages, and problem solving strategies. (PR: EEL 4851C)

CAP 5682 EXPERT AND INTELLIGENT SYSTEMS (3) Basic concepts, techniques and tools for the design and implementation of expert intelligent systems. Knowledge representation, inference methods, knowledge acquisition methods, and some advanced concepts. Tools to facilitate construction of expert and intelligent systems. (PR: EEL 4851C, CI or GS)

CAP 5690 FUNCTIONAL PROGRAMMING LANGUAGES (3) Properties of functional and applicative languages; comparison with conventional languages, features, and examples of applicative languages, LISP, KRC and FORTH. Implications to computer architecture. (PR: COP 4020)

CAP 6100 HUMAN COMPUTER INTERFACE (3) Introduction to the design and evaluation of interface between a computer based application and a human user. (PR: CI)

CAP 6410 COMPUTER VISION (3) Techniques for description and recognition of objects, use of stereo, texture, and motion information for scene segmentation and description, consistent labeling and matching, use of knowledge and planning in computer vision. (PR: CAP 5400)

CAP 6610 COMPUTATIONAL LEARNING THEORY (3) An analysis of learning algorithms within certain computational learning models. Topics include Valiant's learning paradigm, convergence in the limit, decision theory, and other areas related to the theory of machine learning. (PR: CAP 5600, CI)

CAP 6672 ROBOT INTELLIGENCE AND COMPUTER VISION (3) An introduction to robotic systems with emphasis on the computational aspects of robot control. Topics for discussion: overview of the robotics field, analysis of robot arm kinematics and coordinate transformation, real-time computer control of robot arms, and computer vision. Practical experience in programming robotic systems will be included. (PR: COP 4400 or equiv.)

CDA 5400 MODELING COMPUTER SYSTEM PERFORMANCE I (3) Ability to program computers in a higher level language. Development of models based on queuing theory for evaluation of computer system performance. Analysis of open and closed networks of queues. Operational analysis. Asymptotic bounds analysis. (PR: Knowledge of basic calculus and probability theory)

- CDA 5401 MODELING COMPUTER SYSTEM PERFORMANCE II (3)** Continuation of Performance Modeling I. Practical limitations, Numerical accuracy and stability. Students will develop a practical modeling program and explore its use. (PR: CDA 5400)
- CDA 6501 DISTRIBUTED COMPUTER SYSTEMS (3)** Design, performance measurement, and evaluation of distributed systems including distributed system function, network operating systems, protocols and topologies, metering, queuing evaluations, and simulation. (PR: CDA 4100, CDA 4103)
- CDA 6615 NEURAL NETWORKS (3)** Defines models of artificial neural networks, compares these models, and investigates the relationship of neural network learning to other symbolic learning methods. (PR: CAP 5600, CI)
- CIS 6610 SOFTWARE ENGINEERING I: BASIC PRINCIPLES AND FORMAL METHODS (3)** Basic principles and formal methods for systematic development of software systems. Software life cycle, formal specifications, design, verification, and reliability analysis. (PR: EEL 4851C, CR: COP 6621)
- CIS 6611 SOFTWARE ENGINEERING II: TOOLS AND APPLIED TECHNIQUES (3)** Tools and cost-effective techniques for requirements, specifications and analysis, module specification, design and integration, verification and validation, maintenance and project management. (PR: CIS 6610)
- CIS 6900 INDEPENDENT STUDY** Var. Independent study in which students must have a contract with an instructor. Requires completed contract prior to enrollment. S/U. (PR: GS)
- CIS 6914 DIRECTED RESEARCH** Var. Rpt. Requires completed contract prior to enrollment. S/U. (PR: GS)
- CIS 6915 GRADUATE RESEARCH METHODS (1-4)** Special course to train graduate research assistants. Var. Rpt. to a total of 4 credits. Requires completed contract prior to enrollment. S/U. (PR: GS)
- CIS 6916 COMPUTER SCIENCE GRADUATE PROJECT (3)** Computer science engineering project that may be taken by graduate students in place of Master's thesis. Requires completed contract prior to enrollment. S/U. (PR: CI)
- CIS 6930 SPECIAL TOPICS - ADVANCED COMPUTER GRAPHICS (3)** A project course offering more detailed treatment of topics selected from those covered in EEL 6773. Study of most recent developments in computer graphics. (PR: EEL 6773)
- CIS 6930 SPECIAL TOPICS - THEORY OF ALGORITHMS (3)** Analysis of algorithms, models of computation, algorithms for sorting and searching, numerical and matrix algorithms including FFT, theoretical limits of some families of algorithms, NP completeness, epsilon approximation algorithms for NP complete problems. (PR: GS)
- CIS 6930 SPECIAL TOPICS - MEDICAL INFORMATICS (3)** Relationships between computer applications and the practice of medicine. Application of artificial intelligence, imaging, robotics, computer assisted education, and office management systems in the medical practice. (PR: CI)
- CIS 6930 SPECIAL TOPICS - THEORY OF COMPUTER SCIENCE (3)** Modeling computation, turning machines, limitations of computer science, reliable programs, formal semantics. (PR: CI)
- CIS 6930 SPECIAL TOPICS - ARTIFICIAL INTELLIGENCE AND EXPERT SYSTEMS (3)** Special course in designing, planning and building an expert system. Current research topics in expert systems will be covered. (PR: GS)
- CIS 6930 SPECIAL TOPICS - GEOMETRIC MODELING FOR CAD/CAM AND GRAPHICS (3)** Interdisciplinary course dealing with the efficient computer representation, design, and analysis of geometric information describing objects used in CAD/CAM. Graphics and other related fields such as Computer Vision. (PR: CI)

- CIS 6930 SPECIAL TOPICS - FUZZY SETS AND INTELLIGENT SYSTEMS (3)** Introduction to theory of fuzzy sets, their definition, operation, extension of principle, relationships, theory, and fuzzy numbers. (PR: CI)
- CIS 6930 SPECIAL TOPICS - NEURAL NETWORKS (3)** Parallel distributed processing, basic mechanisms, formal analysis methods, psychological and biological models, physical and mathematical models, and electronic and optical implementations. (PR: CI)
- CIS 6935 GRADUATE COMPUTER SCIENCE AND ENGINEERING SEMINAR (1-4)** Seminar for students in computer science and engineering. Rpt. S/U. (PR: CI)
- CIS 6940 GRADUATE INSTRUCTION METHODS (1-4)** Special course to train graduate teaching assistants. Var. Rpt. to a total of 4 credits. S/U.
- CIS 6971 THESIS: MASTER'S** Var. (PR: GS)
- CIS 7917 DIRECTED RESEARCH** Var. Rpt. Requires completed contract prior to enrollment. S/U. (PR: GR. Ph.D. level)
- CIS 7980 DISSERTATION: DOCTORAL** Var. Rpt. (PR: Admission to Doctoral Candidacy)
- COP 5010 TOPICS IN COMPUTERS AND PROGRAMMING (4)** Survey of topics in machine organization systems programming. (PR: CI)
- COP 6611 OPERATING SYSTEMS (3)** Operating systems functions and design, resource management, protection systems, process communication, and deadlocks. (PR: CC)
- COP 6621 PROGRAMMING LANGUAGES AND TRANSLATION (3)** Grammars and languages, symbols, strings, syntax, parsing, the design of a compiler, storage organization and symbol tables, translator writing systems. (PR: CI)
- EEL 5771 INTRODUCTION TO COMPUTER GRAPHICS I (3)** An introduction to the evolution of computer graphics including point-plotting, line drawing, two-dimensional transformations and graphics software packages. (PR: CI)
- EEL 6522 INFORMATION THEORY (3)** Concepts of information, information channels, channel capacity, information sources and Shannon's fundamental theorem, and error correcting codes. (PR: CI)
- EEL 6705 ADVANCED DIGITAL SYSTEMS (3)** Principles of combinational circuit analysis, duality, hazards, IC gates, circuit design. Analysis of fundamental mode sequential circuits, sequential circuit synthesis, design for testability, using MSI and standard cells. Register transfer design and hardware description languages. (PR: EEL 4705)
- EEL 6706 TESTING AND FAULT TOLERANCE IN DIGITAL SYSTEMS (3)** Test generation for combinational and sequential digital circuits, fault analysis and diagnosis. Methods for reliability improvement through fault tolerant and testable circuit design. Introduction to software reliability. (PR: COP 4400, CDA 4201 or CI)
- EEL 6764 PRINCIPLES OF COMPUTER ARCHITECTURE (3)** Arithmetic algorithms, CPU speedup techniques, memory hierarchies, virtual memory, input-output. Study of the number systems and the algorithms used for digital arithmetic computation with emphasis on their implementation, speed and reliability considerations. (PR: CDA 4100 or CI)
- EEL 6766 ADVANCED COMPUTER ARCHITECTURE (3)** Control unit and microprogramming, reduced instruction set computers (RISC), object oriented systems, multiprocessor systems, supercomputers. The macrostructure of computers is considered in this course, ranging from the orthodox von Neumann design to multiprocessors, stack processors, pipeline systems, and associative computers. (PR: EEL 6764 or CI)
- EEL 6773 RASTER GRAPHICS (3)** Advanced course covers the methods of representing of three dimensional objects in the plane of the graphics screen and the hardware and software required for their processing. (PR: EEL 5771 or CI)

EEL 6840 AUTOMATA THEORY I (3) Review of mathematical foundations, decomposition, and interconnection of digital machines, measurement and control of finite-state sequential circuits, machine identification, regular expressions, and finite-state machines. (PR: EEL 5706, COT 3100, GS)

EEL 6841 AUTOMATA THEORY II (3) Turing machines, recursive functions, computability. Artificial language phase-structure grammars, operations on languages, decision problems, discrete value random processes, Markov processes, probabilistic sequential machines, nondeterministic sequential machines. (PR: EEL 6840)

EEL 6846 CODING THEORY (3) Error-correcting codes, algebraic block codes, linear codes and feedback shift registers; BCH codes; convolutional codes; burst error codes; arithmetic codes; decoding methods. (PR: EEL 6522)

ELECTRICAL ENGINEERING

Chairperson: E.K. Stefanakos; *Chairperson Emeritus:* M.R. Donaldson; *Professors:* G.A. Burdick, C.T. Chen, Y.L. Chiou, S.J. Garrett, R.E. Henning, V.K. Jain, L. Jastrzebski, M.G. Kovac, G. Lachs, J. Lagowski, D.L. Morel, A.D. Snider, E.K. Stefanakos, T. E. Wade; *Associate Professors:* K. Buckle, J.G. Cottle, A. Gondeck, D. Keezer, D. Landis, H.A. Nienhaus, R. Sankar, P.H. Wiley; *Assistant Professors:* J.M. Ammons, L.P. Dunleavy, A.F. Hoff, F.D. King; *Lecturer:* J.T. Leffew. *Courtesy Appointment:* E.J. Claire; *Visiting Assistant Professor:* C. Ferekides

EEL 5344 DIGITAL CMOS/VLSI DESIGN (3) Design, layout, simulation, and test of custom digital CMOS/VLSI chips, using a CMOS cell library and state-of-the-art CAD tools. Digital CMOS static and dynamic gates, flip flops, CMOS array structures commonly used in digital systems. Top down design example of a bit slice processor. (PR: EEL 4705 or CC)

EEL 5351 PHYSICAL BASIS OF MICROELECTRONICS (3) Quantum mechanics with emphasis on electronic properties in atoms, molecules, and crystals; quantum statistics; energy band theory; crystal structures; defect chemistry; semiconductor properties. (PR: EEL 3410)

EEL 5356 INTEGRATED CIRCUIT TECHNOLOGY (3) Physics and chemistry of integrated circuit and discrete device fabrication, materials limitations, processing schemes, failure and yield analysis. A laboratory is integral to the course. (PR: EEL 4351 or CI)

EEL 5357 ANALOG CMOS/VLSI DESIGN (3) Design of analog circuits for CMOS/VLSI design. Op amps, comparators, D to A and A to D converters. Switched capacitor filters. Analog simulation. (PR: EEL 4305)

EEL 5437 MICROWAVE ENGINEERING (3) Introduction to passive and active components, devices, and circuits (including transmission lines and wave guides) employed in microwave integrated circuits and systems. (PR: EEL 4411, 4102, or CC)

EEL 5462 ANTENNA THEORY (3) Antenna theory beginning with fundamental parameter definitions and continuing with mathematical concepts, elemental antennas, and arrays. (PR: EEL 4411 or CC)

EEL 5531 VIDEO TRANSMISSION AND HIGH-DEFINITION TELEVISION (3) Principles of video transmission and television. Enhanced definition and high definition television principles, standards, and technology. Digital TV and HDTV. (PR: EEL 4512 or CC)

EEL 5572 LOCAL AREA NETWORKS AND INTERFACING (3) Communication terminals, PCs, telephone, etc. Basics of LANs, LAN characteristics, TX media topologies, LAN protocols, IEEE 802 networks, highspeed LANs, FDDI, network interface, inter-networking; bridges and gateways, LAN design and selection. (PR: EEL 5534 or EEL 4512 or CI)

EEL 5631 DIGITAL CONTROL SYSTEMS (3) Sampled data and digital control processes. (PR: EEL 4657)

EEL 5705 ADVANCED LOGIC SYSTEMS (3) (PR: EEL 4705 or GS)

EEL 5754 MICROPROCESSOR BASED DIGITAL SIGNAL PROCESSING (3) Arithmetic systems, processing structures, efficient algorithms, DSP hardware, TI, NEC, and other DSP

microprocessors; multi-processing hardware, software, and system development. Application to telecommunications. (PR: EEL 4705 or CC)

EEL 5772 INTRODUCTION TO PLASMA PROCESSING AND TECHNOLOGY (3) Self contained introduction to plasma manufacturing methods employed in semiconductor fabrication. Covers physics and chemistry pertaining to plasma process. Prior knowledge in microelectronics and electromagnetics required. (PR: EEL 4411 AND EEL 4303 or equivalent)

EEL 5820 IMAGE PROCESSING (3) Two-dimensional signals (including random), convolution and system functions. Fourier transform and FFT in two dimensions. Digitization of two-dimensional signals, quantization and aliasing errors. Filtering, restoration, and low bit-rate coding of images. Application to video-conferencing. (PR: EEL 6502 or CC)

EEL 5935, 5936, 5937 SPECIAL ELECTRICAL TOPICS I,II,III (3,3,3)

EEL 6141, 6142, NETWORK SYNTHESIS I, II (3,3) Network functions; physical realizability, two terminal network synthesis methods, frequency transformation, potential analogy, approximation problems, insertion-loss and transfer function synthesis. (PR: CC)

EEL 6150, 6151 ADVANCED CIRCUIT THEORY I, II (3,3) Network fundamentals; network characterization, frequency analysis; superposition integrals; signal-flow techniques, stability problems; real and imaginary relations. (PR: CC)

EEL 6174 OPTIMAL FILTERING AND IDENTIFICATION (3) Estimation theory and development of the Kalman-Wiener filter for continuous discrete-time systems. System identification through deterministic and stochastic approaches. Application to control and communication systems. (PR: CC or EEL 4657)

EEL 6303 CHARACTERIZATION OF SEMICONDUCTORS (3) Electrical, optical, chemical, and physical methods used to characterize semiconductor materials and devices; includes surface and near surface spectroscopies. Available to non-majors. (PR: EEL 4351 or CI)

EEL 6345 VLSI FOR SIGNAL PROCESSING (3) VLSI applications in signal processing and telecommunications. General purpose DSP architectures. ASIS architectures: systolic arrays, data-flow multiprocessing, wavefront arrays. Case histories: modems, echo cancelers, digital PLL, etc. High-speed arithmetic and algorithms. (PR: EEL 5344 and EEL 5754 or CC)

EEL 6346 INTEGRATED CIRCUIT AND SYSTEM DESIGN (3) Design and analysis of "very large scale" integrated circuits and systems. Advanced VLSI/ULSI/WSI system design principles and architectures, with consideration of yield, reliability, performance, physical design, modeling, test and maintenance and CAD. (PR: EEL 5344 or CI)

EEL 6353, 6354 SEMICONDUCTOR DEVICE THEORY I, II (3,3) Theory of operation and application of circuits and devices. (PR: CC)

EEL 6355 COMPOUND SEMICONDUCTOR TECHNOLOGY (3) Bulk crystal and epitaxial growth technologies of III-V and II-VI compound semiconductors. The properties, characterization, and device applications of these compounds will be emphasized. (PR: EEL 4351 or Equivalent)

EEL 6386, 6389 PRINCIPLES OF SEMICONDUCTOR DEVICE MODELING I, II (3,3) Course sequence emphasizes systematic methods for obtaining models that relate device physics to terminal behavior and that provide appropriate compromises between accuracy and simplicity. (PR: EEL 4102, EEL 4411, EEL 4351)

EEL 6387 NOISE THEORY (3) Electrical noise and signals through linear filters and electronic systems. (PR: CC)

EEL 6391 NOISE IN ELECTRICAL DEVICES (3) Characteristics, measurements and generation mechanisms of noise sources observed in electronic materials and devices. Materials and devices to be considered include thin and thick films, superconductors, semiconductors and semiconductor devices. (PR: EEL 6387 or Equivalent)

Engineering

- EEL 6434 ACTIVE MICROWAVE STRUCTURES AND DEVICES (3)** Theory and design of solid state low noise and high power amplifiers, solid state oscillators and high power tubes for waveguide, coax and integrated circuit applications. (PR: CC or EEL 6432)
- EEL 6447C OPTOELECTRONICS (3)** Basic principles and operations of lasers and analyses of power output and frequency pulling in laser oscillators. (PR: EEL 3410, PHY 4604)
- EEL 6448 INTEGRATED OPTICS (3)** A study of integrated optical devices and guided wave optical systems. (PR: EEL 6447)
- EEL 6449 FOURIER OPTICS AND SYSTEMS (3)** A study of optical applications of linear systems and Fourier transforms. (PR: EEL 4102)
- EEL 6463 ADVANCED ANTENNA THEORY (3)** Electromagnetic radiating systems studied by analytical and numerical methods. (PR: EEL 4411 or CC)
- EEL 6481 NUMERICAL TECHNIQUES IN ELECTROMAGNETISM (3)** Review of Maxwell's equations. Finite differences, finite elements, boundary elements (method of moments). Introduction to geometric theory of optics and diffraction. (PR: EEL 5462, EEL 6486, or CC)
- EEL 6486 ELECTROMAGNETIC FIELD THEORY (3)** Time-harmonic electromagnetic fields emphasizing problems with exact solutions in the rectangular, cylindrical and spherical coordinate systems. Solutions by eigenfunction methods and Green's functions. (PR: EEL 4411 or CC)
- EEL 6487 ADVANCED ELECTROMAGNETIC FIELD THEORY (3)** Time harmonic electromagnetic fields emphasizing problems and solution methods which are approximate in nature. Geometrical optics, WKB method, wave scattering. (PR: EGN 5424 and EEL 6486 or CC)
- EEL 6502 DIGITAL SIGNAL PROCESSING I (3)** Digital signals and Fourier transforms. Z-transforms, digital filter networks; DFT, DCT, and fast transforms. Design of IIR and FIR filters; quantization effects. Multi-rate processing; interpolation and decimation. (PR: EEL 4102 or CC)
- EEL 6506 COMMUNICATION NETWORKS (3)** Objectives of networking, basic topologies and architectures, physical channel considerations. Circuit and packet switching; node design, link and flow control. Access schemes and protocols. Network performance for voice/videotext data. Intelligent networks and ISDN. (PR: EEL 6534 or CC)
- EEL 6519 ULTRA HIGH SPEED COMMUNICATIONS (3)** Ultra high-speed channels; radio, microwave, and lightwave. High-order constellations. Multiplexing, demultiplexing, and framing. Adaptive equalization for inter-symbol interference and multi-path fading. Switching (space and time) for UHS streams. (PR: EEL 6535 or CC)
- EEL 6531 TELECOMMUNICATIONS I (3)** Introduction to telecommunications. Telephone (voice and data), video and facsimile transmission. Intersymbol interference, adaptive equalizers, error correcting codes. (PR: CC)
- EEL 6534 COMMUNICATION SYSTEMS I (3)** Digital communication and information theory. Random processes and Markov chains. Communication channels including optical and microwave. Digital modulation and demodulation. Detection theory: matched filter, sequence detection. (PR: CC or EEL 4102)
- EEL 6535 COMMUNICATIONS SYSTEMS II (3)** Probability of symbol error in sequence detection. Intersymbol interference; linear and decision feedback equalizers; adaptive equalization. Spectrum control and line coding. Trellis coding. Synchronization: Phase-locked loops; Carrier recovery; Symbol timing recovery. (PR: CC or EEL 6534)
- EEL 6537 ADVANCED DETECTION THEORY (3)** Fundamental principles of signal detection. Likelihood functions; threshold detection; parameter estimation; applications to radar, sonar and digital communication systems. (PR: EEL 6545 or CC)
- EEL 6545 RANDOM PROCESSES IN ELECTRICAL ENGINEERING (3)** Review of probability theory, functions of random variables; examples in electrical engineering. Sequences of random

variables. Concepts in random processes, correlation functions, power spectrum, random inputs to linear systems. Spectral analysis. Applications to engineering systems.

- EEL 6563 OPTICAL FIBER COMMUNICATION (3)** A study of fiber-optic technology as applied to communications systems. (PR: EEL 6545)
- EEL 6585 SPEECH SIGNAL PROCESSING (3)** Speech models: acoustic tube, source-filter. Time and frequency domain properties. Linear prediction analysis of speech. Speech coding: APCM, DPCM, ADPCM, sub-band, VQ, etc. Speech synthesis and recognition. Speech processing hardware. (PR: EEL 6502 or CC)
- EEL 6613 MODERN CONTROL THEORY (3)** A study of modern control techniques including optimum and adaptive control. (PR: EEL 4657 or CC)
- EEL 6614 SYSTEMS AND CONTROL THEORY I (3)** Analysis of multi-variable linear systems (continuous and discrete time, state-space methodology and transfer functions description). Analysis and design of feedback control systems. Effects of plant and measurement noise. Optimal control. (PR: CC or EEL 4657)
- EEL 6615 SYSTEMS AND CONTROL THEORY II (3)** Continuation of EEL 6614. (PR: CC or EEL 6614)
- EEL 6620 NONLINEAR CONTROL SYSTEMS (3)** Principles of state-variables, phase-plane and describing functions. (PR: EEL 4657)
- EEL 6640 RANDOM PROCESSES IN CONTROL SYSTEMS (3)** Analysis and design of control systems subject to random inputs and disturbances. (PR: EEL 4657)
- EEL 6707 ADVANCED DIGITAL SYSTEMS (3)** Principles of combinational circuit analysis, duality, hazards, IC gates, circuit design. Analysis of fundamental mode sequential circuits, sequential circuit synthesis, design for testability, using MSI and standard cells. Register transfer design and hardware description languages. (PR: EEL 4705, CI)
- EEL 6752 DIGITAL SIGNAL PROCESSING II (3)** Fast algorithms, FFT, fast convolution; DCT, CZT. Random signals. Linear prediction, application to speed coding. Spectrum estimation. Quantization effects. Pencil-of-functions method. Adaptive filtering and equalization. (PR: CC or EEL 6502)
- EEL 6753 DIGITAL SIGNAL PROCESSING III (3)** Topics in digital signal processing, e.g., speech processing, radar signal processing, adaptive arrays, and noise cancellation. Rpt. (PR: CC or EEL 6752)
- EEL 6846 CODING THEORY (3)** Error-correcting codes, algebraic block codes, linear codes and feedback shift registers; BCH codes; convolutional codes; burst error correcting codes; arithmetic codes; decoding methods. (PR: ENG 5423 or CC)
- EEL 6908 INDEPENDENT STUDY** Var. Independent study in which students must have a contract with an instructor. Rpt. S/U.
- EEL 6932 ADVANCED ENGINEERING SEMINAR (1-3)** (PR: CC)
- EEL 6935 SELECTED ELECTRICAL TOPICS (1-3)** (PR: CC)
- EEL 6936 SPECIAL ELECTRICAL PROBLEMS (1-3)** (PR: CC)
- EEL 6971 THESIS: MASTER'S** Var. Rpt.
- EEL 7910 DIRECTED RESEARCH** Var. Rpt. S/U. (PR: GR. Ph.D. level)
- EEL 7931 SELECTED TOPICS IN COMMUNICATION (3)** Advanced topics in communications such as synchronization, spread-spectrum communications, fading channels, large constellation signaling schemes, mobile radio, statistical multiplexing, performance measurement, etc. (PR: EEL 6535)
- EEL 7980 DISSERTATION: DOCTORAL** Var. (PR: Admission to Candidacy)

INDUSTRIAL AND MANAGEMENT SYSTEMS ENGINEERING

Chairperson: P.E. Givens; *Professors:* P.E. Givens, L.A. Weaver; *Associate Professors:* S.K. Khator, L.C. Leung, O.G. Okogbaa; *Assistant Professors:* A.L. Callahan, T.K. Das, W.A. Miller.

- EIN 5245 WORK PHYSIOLOGY AND BIOMECHANICS (3)** Human physiological limitations encountered in the design, analysis and evaluation of man-machine systems. (PR: CC)
- EIN 5253 HUMAN PROBLEMS IN AUTOMATION (3)** The study of analysis of combined human operations, automated processes, and robotics in industrial environments.
- EIN 5301C INDUSTRIAL ENGINEERING CONCEPTS (3)** Survey of industrial and management engineering methodology. Work measurement, methods, production and inventory control, and facility design. (PR: CC)
- EIN 5322 PRINCIPLES OF ENGINEERING MANAGEMENT (3)** Introduction to the fundamentals of accounting, finance, management, and marketing as needed by engineers, scientists, and other professionals in managerial positions.
- EIN 5357 ENGINEERING VALUE ANALYSIS (3)** Statistical models for analyzing engineering alternatives from an economic viewpoint. The use of advanced engineering economy concepts in solving industrial problems. (PR: EIN 5219 or equiv.)
- EIN 5386C PROBLEMS IN ENGINEERING MANAGEMENT (3)** A study of problems encountered by managers in the planning, organizing, directing, and controlling of resources in technology-based organizations.
- EIN 5388 TECHNOLOGICAL FORECASTING (3)** Introduction to forecasting techniques used to plan and schedule production and inventory control functions. Smoothing and decomposition time-series methods, regression methods, and autoregressive/moving average methods. Integrating forecasting and planning into the engineering organization.
- EIN 5914, 5915, 5916 SPECIAL INDUSTRIAL PROJECTS I, II, III (1-3 Each)** (PR: CC).
- EIN 6106 TECHNOLOGY AND LAW (3)** Selected topics related to the relationships between and among technology, law and social policy, including governmental regulation, products liability, professional liability, contract negotiation and formation, and developments and trends affecting engineering professionals. (PR: CI)
- EIN 6107 PROFESSIONAL BEHAVIOR AND THE ENGINEER (3)** A study of professional ethics and morals as faced by technical managers in the development, production, and marketing of industrial products and services. Emphasis on case studies, class discussions, and guest lecturers regarding ethical issues in managerial decision making. (PR: CI)
- EIN 6119 DECISION SUPPORT SYSTEMS IN ENGINEERING MANAGEMENT (3)** Conceptual foundations of decision support systems with focus on the needs of engineering managers and effective decision making in technological and scientific organizations.
- EIN 6121 TECHNOLOGY AND MARKETS (3)** Marketing strategy and management of R&D programs, engineering projects and systems from the viewpoint of interaction between the technical enterprise and its industrial and government customers.
- EIN 6204 ENGINEERING INFORMATION PROCESSING (3)** A study of human information processing theories and measurement techniques as applied to engineering problems emphasizing perceptual, cognitive, and learning aspects of interpersonal and human-computer communication.
- EIN 6218 HAZARDS CONTROL ENGINEERING (3)** A study of occupational hazards and their control in the work place including regulations, organizational aspects and methodologies to control the industrial environment. (PR: CI)
- EIN 6246C HUMAN FACTORS RESEARCH METHODOLOGY (3)** Detailed study of experimental methodology, choice of independent and dependent variables, data collection, analysis, and

related theory used for evaluation of performance in human/machine systems. Emphasis on parametric analysis techniques, uncertainty theory and signal detection theory.

EIN 6249C SYSTEMS DESIGN AND TASK ANALYSIS (3) Task analysis for design of human/machine interface. Methodologies for collecting and evaluating task analysis information. Evolution of systems and application of human factors engineering methods in systems design.

EIN 6258 HUMAN/COMPUTER INTERACTION (3) Application of human factors in the design and operation of man/machine systems. Analysis of the use of microprocessors and computer-controlled devices in man/machine systems. (PR: EIN 5245)

EIN 6265 INDUSTRIAL MENTAL HEALTH (3) Theories and concepts of mental hygiene and positive mental health as applied to organizational settings. Review of research studies related to industrial mental health; stress management; strategies for improving mental health and employee performance.

EIN 6319 WORK DESIGN AND PRODUCTIVITY ENGINEERING (3) Foundations of motivated work performance, job satisfaction and organizational productivity. Analysis of job content and job context, comparison of different concepts for improving organizational effectiveness; suggestions for productivity improvements through effective work redesign.

EIN 6323 ENGINEERING MANAGEMENT POLICY AND STRATEGY (3) Strategic planning and policy formulation in technical and scientific organizations. General managers in the middle. Translation of strategic plans into action plans and implementation of the strategic change process. This is a capstone course in the EM program to be taken during the last semester of the student's program.

EIN 6324 TECHNICAL ENTREPRENEURSHIP (3) A comprehensive study of developing and starting an engineering venture. Student teams work out a complete business plan for a company to develop, manufacture, and distribute a technical product or service.

EIN 6336 PRODUCTION CONTROL SYSTEMS (3) Forecasting models, development of production plans, loading and scheduling models and basic inventory models. Use of MRP. Design and evaluation of production control systems. (PR: CC)

EIN 6605C ROBOTICS AND ASSEMBLY AUTOMATION (3) The use of robots in manufacturing assembly; coordinated use of robots, machine tools, feeders, holding devices, and material handling systems.

EIN 6934, 6935, 6936 SPECIAL INDUSTRIAL TOPICS I, II, III (1-3 Each) (PR: CC)

EIN 6971 THESIS: MASTER'S Var. Rpt.

ESI 5216 ENGINEERING STATISTICS II (3) Application of non-parametric statistics, sequential analysis, orthogonal polynomials and other advanced statistical techniques to solving engineering problems. (PR: EGN 3443 or equiv.)

ESI 5219 STATISTICAL METHODS FOR ENGINEERING MANAGERS (3) Study of statistical methods applied to engineering management problems involving estimation and prediction under conditions of uncertainty. Not open to students who have had EGN 3443.

ESI 5233 RELIABILITY ENGINEERING (3) Fundamental concepts of reliability. Estimation of reliability of systems and components. Measures of availability, maintainability and reliability. (PR: ESI 5219 or equiv.)

ESI 5306 OPERATIONS RESEARCH FOR ENGINEERING MANAGEMENT (3) Linear programming, non-linear programming, queuing, inventory, network analysis. Not open to students who have had ESI 4315. (ESI 5219 or equiv.)

ESI 5470 MANUFACTURING SYSTEMS ANALYSIS (3) The study of systems of manufacturing entities such as machine tools, robots, and materials handlers. Emphasis is on mathematical description of integrated systems and system optimization. (PR: CC)

Engineering

- ESI 5522 COMPUTER SIMULATION** (3) Design of discrete and continuous simulation models. Model validation and verification. Statistical analysis of simulation model output. (PR: ESI 4521 or equiv.)
- ESI 6213 THEORY OF INDUSTRIAL STATISTICS** (3) Study of the theory behind the statistical techniques applied to the solving of engineering problems. (PR: ESI 5219 or equiv.)
- ESI 6222C ECONOMIC QUALITY CONTROL** (3) The design of acceptance sampling systems and control charts for the economic point of view. Consideration of the effects of inspection error on sampling plan and control chart designs. (PR: EIN 5353, ESI 4221)
- ESI 6225 QUALITY ASSURANCE PLANS** (3) Advanced techniques in quality control systems. Includes study of articles in current journals. (PR: ESI 5219 or equiv.)
- ESI 6247 STATISTICAL DESIGN MODELS** (3) Design of experimental mathematical models. Application of advanced analysis of variance techniques as applied to industrial problems. (PR: ESI 5219 or equiv.)
- ESI 6291 SPECIAL TOPICS IN STATISTICS** (3) Special topics in statistics related to research in engineering. (PR: CC)
- ESI 6336 QUEUING THEORY** (3) Introduction to queuing models. Poisson queues, non-Poisson queues, decision models, transient analysis and special queuing topics. (PR: ESI 4315)
- ESI 6341 DYNAMIC PROBABILISTIC SYSTEMS** (3) Theory and application of stochastic engineering problems. Emphasis on dynamic systems involving Markov processes, recurrent processes, normal processes, and counting processes. (PR: ESI 4215)
- ESI 6405 NONLINEAR AND DYNAMIC PROGRAMMING** (3) Optimization using nonlinear programming techniques. Techniques of solution using zero-one, integer, quadratic, geometric, and dynamic programming. Variational methods. (PR: ESI 6491 or equiv.)
- ESI 6414 LINEAR PROGRAMMING AND NETWORKS MODELS** (3) Linear models, the simplex method, duality theory, sensitivity analysis, transportation and assignment problems, integer programming, network models, large-scale systems. (PR: ESI 4314 or equiv.)
- ESI 6491 MULTIVARIATE OPTIMIZATION** (3) Classical optimization theory. Direct and indirect methods for system optimization using theoretical and numerical methods. Penalty function and vector-space methods. Response surface methods. Computer implementation. (PR: CC)
- ESI 6550 INDUSTRIAL SYSTEMS DESIGN** (3) Design of integrated systems using statistical and operations research models. Digital simulation using several different systems. (PR: ESI 4521, ESI 4315 or equiv.)
- ESI 6552 EVALUATION OF SYSTEM PERFORMANCE** (3) Applications of probability and random processes to the design and evaluation of physical systems from the viewpoint of satisfying prescribed specifications. (PR: ESI 4215, ESI 4315 or equiv.)
- ESI 6555C TOPICS IN AUTOMATION** (3) Study of recent advances in automated systems, automation concepts, control methods, numerical control, adaptive control. (PR: CC)
- ESI 6906 INDEPENDENT STUDY** Var. Independent study in which students must have a contract with an instructor. Rpt. S/U.
- ESI 6911 DIRECTED RESEARCH** Var. Rpt. S/U. (PR: GR, ML)
- ESI 6991 GRADUATE RESEARCH METHODS** (1-5) Special course to be used primarily for the training of graduate research assistants. Var. Rpt. to a total of five credits. S/U.
- ESI 7911 DIRECTED RESEARCH** Var. Rpt. S/U. (PR: GR, Ph.D. level)
- ESI 7980 DISSERTATION: DOCTORAL** Var. (PR: Admission to Candidacy)

MECHANICAL ENGINEERING

Chairperson: R.H. Howell; *Professors:* R.A. Crane, R.H. Howell, S.J. Ying; *Associate Professors:* A. Kaw, J. Porteiro, S. Wilkinson; *Assistant Professors:* G.H. Besterfield, D.P. Hess; *Courtesy Appointment:* L.A. Scott

- EGM 6656 THEORY OF ELASTICITY (3)** Classical and contemporary elasticity theory with applications to engineering problems. (PR: CES 6116)
- EGM 6675 THEORY OF PLASTICITY (3)** A study of the theory of plasticity including initial and subsequent yield surfaces, incremental and deformation theories. (PR: CI)
- EMC 5315 MACHINE CONTROL SYSTEMS (3)** Machine control system components and their effects on closed-loop system performance. Transfer characteristics of hydraulic, pneumatic and electrical elements and processes. (PR: ECH 5314 or CI)
- EMC 6318 DIRECT DIGITAL CONTROL II (3)** A continuation of EMC 6317 with detailed study of special cases. Cases will vary from term to term. (PR: EML 6317 or CI)
- EML 5225 ACOUSTICS AND NOISE CONTROL (2)** Fundamentals of sound propagation, sound power and intensity. Psychoacoustics, industrial noise sources and methods of attenuation. Noise ordinances and instruments for noise measurement. (PR: CC)
- EML 5241 TRIBOLOGY (3)** Introduction to friction, lubrication and wear. Contact of real surfaces, mechanics of friction, surface failures, boundary lubrication fluid properties, thin film lubrication, thick film lubrication, bearing and lubricant selection. (PR: EML 4503)
- EML 5325 MECHANICAL MANUFACTURING PROCESSES (3)** Description of mechanical cutting, forming, and fabrication methods as used in modern industrial processes. (PR: CI)
- EML 5395 MOTOR SELECTION AND CONTROL (3)** Standard electrical voltages; power wiring in industrial plants; NEMA motor designs and their industrial uses; techniques for estimating motor starting times and temperature rise; motor selection; starting and operating safety interlocks; conventional motor starting and control systems, direct digital (programmable) controls; electrical code requirements for conductors and protective devices. (PR: EGN 3373, EGN 3433)
- EML 5930, 5931 SPECIAL TOPICS III, IV (1-4 each) (PR: CC)**
- EML 6105 ADVANCED THERMODYNAMICS AND STATISTICAL MECHANICS (3)** Topics in classical thermodynamics, some elementary subjects in statistical mechanics and some applications in combustion. (PR: ECH 3023 or EML 4106 or CI)
- EML 6120 NUMERICAL METHODS IN HEAT TRANSFER (3)** Application of finite difference and finite element techniques to problems of conduction and convection. Cartesian, cylindrical and spherical systems. Steady and transient solutions. (PR: CI)
- EML 6121 ADVANCED CONDUCTION ANALYSIS (3)** Multi-dimensional heat transfer. Emphasis on solution techniques, exact and numerical. (PR: EML 4142, EML 4041)
- EML 6122 RADIATION (3)** Review of basic principles of radiation, grey bodies and real surfaces, calculation of shape factors, absorbing gases. (PR: EML 4142)
- EML 6223 SYNTHESIS OF VIBRATING SYSTEMS (3)** Advance topics in vibration. Random vibration in mechanical systems. Autocorrelation and power spectral density. Response of single and multidegree of freedom systems to random excitation. Frequency response function and coherency measurements. Contents variable. (PR: EML 4220)
- EML 6232 COMPOSITE LAMINATED MATERIALS (3)** Fundamental relationships for predicting the mechanical and thermal response of multi-layered materials and structures. Micromechanical and macromechanical relationships are developed for laminated materials with emphasis on continuous filament. Material, structural and strength optimization to design laminated composite materials using user-friendly software. (PR: EML 3500)

Engineering

- EML 6235 APPLIED ENGINEERING ASPECTS OF FATIGUE (2)** Evaluation of strength of machine members under fatigue loadings. Stress concentrations, residual stress effects, surface coatings, environmental effects. Statistics in fatigue analysis. (PR: EML 6528 or CI)
- EML 6273 ADVANCED DYNAMICS OF MACHINERY (3)** Detailed study of velocities, accelerations and forces in machines with parts having rotating, reciprocating, and combined motion. (PR: EML 3624 or CI)
- EML 6317 DIRECT DIGITAL CONTROL I (3)** Application of digital computers to control of engineering processes. Includes study of digital filtering Z-transforms, supervisory control, A/C and D/A conversion and advanced control strategies. (PR: EML 4312, EML 4041, or CI)
- EML 6336 MACHINERY DIAGNOSTICS (3)** Vibration transducers, sensors and measurement points. Data acquisition and analysis. Frequency analysis and instrumentation. Condition analysis and evaluation. Trend analysis. Diagnostics of bearings and gears. Cepstral analysis. Rotor balancing and rotor-bearing instabilities. (PR: EML 4220)
- EML 6528 ANALYSIS METHODS FOR MECHANICAL DESIGN (3)** Treatment of stress, strain, and strengths of machine design. Application of failure theories, residual stresses, and energy principles to machine elements. (PR: EML 3500, or CI)
- EML 6533 ADVANCED MECHANICAL DESIGN (2)** A technical application course involving the problem of developing machines to perform specified functions. Includes evaluation of kinematic performance and examination of parts from stress, strain, wear, and fabrication. (PR: CC)
- EML 6570 DESIGN RELIABILITY (3)** Treatment of uncertainties in the design of structural and machine elements. Optimization procedures for design and reliability. Calculations of second-moment statistics and probability of failure. Introduction to the probabilistic finite element method. (PR: CI)
- EML 6606 HVAC SYSTEMS (3)** Criteria for selection of systems types; performance, characteristics of single zone, multizone, double duct and variable volume systems; energy conservation in HVAC design; HVAC controls; computer models of HVAC systems; solar energy used in HVAC. (PR: EML 4601 or CI)
- EML 6713 ADVANCED FLUID MECHANICS (3)** Introduction to computational problem solutions in fluid mechanics and heat and mass transfer as applied to mechanical engineering. The emphasis is on the formulation and solution of computational engineering problems. (PR: CI)
- EML 6801 ROBOTIC SYSTEMS (3)** Overview of existing industrial and specialized robot types and operation; vision systems; tactile sensors; ranging and proximity techniques; actuation/transmission methods; power sources; autonomous vehicle mobility and navigation methods; and artificial intelligence. (PR: CI)
- EML 6906 DIRECTED RESEARCH** Var. Rpt. S/U. (PR: GR., ML)
- EML 6907 INDEPENDENT STUDY** Var. Independent study in which students must have a contract with an instructor. Rpt. S/U. (PR: GR)
- EML 6930 SPECIAL PROBLEMS I (1-3)** (PR: CC)
- EML 6931 SPECIAL PROBLEMS II (1-3)** (PR: CC)
- EML 6938 GRADUATE INSTRUCTION METHODS (1-4)** Special course to be used for training of graduate teaching assistants. Var. Rpt. to a total of 4 credits. S/U. (PR: CC)
- EML 6971 THESIS: MASTER'S** Var. (PR: CC)
- EML 7915 DIRECTED RESEARCH** Var. S/U. (PR: CC and GR. Ph.D. level)
- EML 7980 DISSERTATION: DOCTORAL (1-12)** (PR: Admission to Candidacy)

College of Fine Arts

ART

Chairperson: J. Marquardt-Cherry *Professors:* C.J. Fager, R.W. Gelinias, J.M. Kronsoble, M.R. Larsen, C.P. Lyman, B.L. Marsh, M.A. Miller, G. Pappas; *Associate Professors:* S.L. Davis, V. Hirt, L.S. Marcus, J. Marquardt-Cherry, T.E. McLaughlin, B.J. Nickels, D.R. Wright, T.F. Wujcik; *Assistant Professors:* R. Beckman, J. DeLappe, M. Filippo, C. Gaille, B.A. Shanks, H. Szepe, J. Wein; *Lecturers:* D.H. Elmeer; *Other Faculty:* D.L. Rosenzweig.

Admission to all 5000 level studio courses by Consent of Instructor.

ARH 5333 CULTURAL AND INTELLECTUAL HISTORY OF RENAISSANCE AND BAROQUE ART (4) A course in which Renaissance and Baroque theories of art are treated as part of general cultural and intellectual history.

ARH 5451 CULTURAL AND INTELLECTUAL HISTORY OF MODERN ART (4) A course in which theories of modern artists and of critics and historians of Modernism are treated as a part of general cultural and intellectual history.

ARH 5795 METHODS OF ART HISTORY (4) This course introduces students to various methods used by art historians to analyze the form and content of individual works of art, and to various modes of historical explanation. (Must be taken during the student's first two semesters in the M.A. program.)

ARH 5797 GALLERY AND MUSEUM INTERNSHIP (2-6) By working in Bay Area museums or galleries, students will become familiar with various museological operations. Internships vary owing to the work at hand in particular museums, but possible areas of work include registration, installation, conversation, writing of grants, or museum education. (Students are eligible after completing one semester in the program.) S/U only.

ARH 6055 ART HISTORY (4) Rpt. (PR: CI)

ARH 6332 CURRENT HISTORIOGRAPHY: RENAISSANCE (4) This course explores current perspectives on problems of Renaissance historiography. (PR: ARH 5333)

ARH 6335 CURRENT HISTORIOGRAPHY: BAROQUE-ROCOCO (4) This course explores current perspectives on problems of Baroque and Rococo historiography. (PR: 5333)

ARH 6440 CURRENT HISTORIOGRAPHY: 19TH CENTURY (4) This course explores current perspectives on problems in the historiography of 19th Century Art. (PR: ARH 5451)

ARH 6465 CURRENT HISTORIOGRAPHY: 20TH CENTURY (4) Cultural and intellectual history of Modern Art. (PR: 5451)

ARH 6798 SEMINAR IN ART HISTORY (4) Var. Specialized topics in art history. (PR: CI)

ART 5125C CERAMICS (4) Advanced problems in the various ceramic techniques, including throwing and glaze calculation. Rpt. (PR: ART 4111C)

ART 5340C DRAWING (4) Advanced problems in various drawing techniques. Emphasis on individual creative expression. Rpt. (PR: ART 4320C)

ART 5422C LITHOGRAPHY (4) Advanced problems in various lithographic techniques. Emphasis on individual creative expression. Rpt. (PR: ART 4421C)

ART 5472C INTAGLIO (4) Investigations into more complex intaglio processes including photoengraving and color printing procedures. Emphasis on personal conceptual development in graphic media. Rpt. (PR: ART 4471C)

ART 5532C PAINTING (4) Advanced problems in the various painting techniques. Emphasis on individual creative expression. Rpt. (PR: ART 4520C)

- ART 5730C SCULPTURE (4)** Advanced problems in the various techniques of sculpture. Emphasis on individual creative expression. Rpt. (PR: ART 4702C)
- ART 5910 RESEARCH (1-4)** Rpt. (PR: CC)
- ART 5936 STUDIO TECHNIQUES: SELECTED PROJECTS (2)** Concentration in specialized technical data and process. Rpt. for different topics only. (PR: Visual Concepts I, II and Introduction to Art, the topic-technique-related 3000-4000 level studio sequence and CI)
- ART 6126C CERAMICS (4)** Rpt. (PR: CI)
- ART 6341C DRAWING (4)** Rpt. (PR: CI)
- ART 6423C LITHOGRAPHY (4)** Rpt. (PR: CI)
- ART 6473C INTAGLIO (4)** Rpt. (PR: CI)
- ART 6580C PAINTING (4)** Rpt. (PR: CI)
- ART 6620C PHOTOGRAPHY (4)** Rpt. (PR: CI)
- ART 6731C SCULPTURE (4)** Rpt. (PR: CI)
- ART 6907 INDEPENDENT STUDY** Var. Independent study in which student must have a contract with an instructor. Rpt. S/U.
- ART 6911 DIRECTED RESEARCH** Var. Rpt. S/U. (PR: GR. ML)
- ART 6936 GRADUATE SEMINAR (2)** Advanced course in theoretical and conceptual foundations of the visual arts. The specific structure and content to be determined by the instructor.
- ART 6937 GRADUATE INSTRUCTION METHODS (1-4)** Special course to be used primarily for the training of graduate teaching assistants. Var. Rpt. up to 4 credits. S/U.
- ART 6940 SELECTED TOPICS IN ART (1-4)** Variable credit depending upon the scope and magnitude of the work agreed to by the student and the responsible member of the faculty. Rpt. (PR: GS and CI)
- ART 6956 GRADUATE STUDIO THESIS DOCUMENTATION (2)** An advanced seminar focused on the problems of documenting in verbal form the development of a body of work in the visual arts. (PR: CI)
- ART 6971 THESIS: MASTER'S** Var. Rpt.
- PGY 5425C PHOTOGRAPHY (4)** Advanced work in photography and related media leading to development of personal/expressive statements. Rpt. (PR: CI)
- PGY 5530 CINEMATOGRAPHY (4)** Advanced studio work using black and white, color and sound as technical and aesthetic factors in visual, artistic productions. Rpt. (PR: ART 4631C)
- PGY 6540 CINEMATOGRAPHY (4)** RPT. (PR: CI)

MUSIC

Director: J.J. Heller; *Professors:* F.T. Borkowski, V.A. Bridges, L.R. Cullison, C.P. Doane, J.J. Heller, R.E. Helps, V.S. Jennings, J.E. Lewis, R.M. McCormick, W.D. Owen, M.N. Rearick, J.L. Smith, R.J. Summer, A.J. Watkins, A.N. Woodbury; *Associate Professors:* R.O. Froelich, A.L. Hawkins, W.P. Hayden, W.W. Jaworski, H.K. Jones, D.W. Kneeburg, A.Y. Monroe, C.R. Owen, J.M. Reynolds, J.O. Robison, A.V. Summer, M.B. Thompson, N.R. Warfield; *Assistant Professors:* R.E. Blake, E.H. Cumming, J.K. Khorsandian, S.N. Kluksdahl, J.L. Moore, J.B. Moorhead, P.H. Reller, J.W. Richmond, W.S. Woodruff.

- MUC 6251 COMPOSITION (4)** Private instruction in original composition. Required of composition majors. Rpt. for three semesters. (PR: CI)
- MUC 6444, 6445 ELECTRONIC MUSIC/ANALOG/DIGITAL SYSTEMS RESEARCH (3,3)** State-of-the-art compositional and performance applications; new concepts of electronic music synthesis; documentation and critical analysis of new repertory. (PR: CI)

MUG 6254 BAND/WIND ENSEMBLE CONDUCTING (3) Combination of lecture, seminar, laboratory and individual instruction experiences designed to provide development of advanced conducting skills. Rpt. up to 12 hours.

MUG 6256, 6257, 6258 CHORAL LITERATURE AND CONDUCTING (4,4,4) Combination of seminar, classroom, and laboratory types of experience designed to provide depth in stylistic study of choral music literature and performance. (PR: CI)

MUL 6375 TWENTIETH CENTURY MUSIC LITERATURE (3) A study of the literature, compositional techniques, and music philosophies of the major 20th century composers from Debussy to the present. (PR: CI)

MUL 6410, 6411 KEYBOARD REPERTORY (2,2) A study of style, history, and performance practice in keyboard repertory including masterworks of all periods. (PR: CI)

MUL 6505 SYMPHONIC LITERATURE (2) A chronological study of the development of orchestral music; analysis and study of major works from a stylistic and biographical perspective. (PR: CI)

MUL 6555 BAND/WIND ENSEMBLE LITERATURE (3) Combination of seminar and classroom experiences designed to provide depth in historical study of band and wind ensemble literature. May not be repeated for credit.

MUL 6565 CHAMBER MUSIC LITERATURE (2) A survey and stylistic analysis of chamber music repertory 1750 through the present day. (PR: CI)

MUL 6624, 6625 SONG LITERATURE (2,2) Solo song literature from the 17th century through the contemporary with emphasis on German lieder, French songs, and contemporary English and American songs; special emphasis on performance. (PR: CI)

MUL 6671 OPERA LITERATURE (2) A chronological study of the development of opera from 1600 to the present; emphasis on the technical, stylistic, and performance aspects of opera. (PR: CI)

MUL 6687 SOLO VOCAL LITERATURE IN ORATORIO (2) A survey of literature for the solo voice in cantatas and orchestral music. (PR: CI)

MAJOR ENSEMBLE PERFORMANCE COURSES (below) Open to all university students with the necessary proficiency in their performing media; study and performance of music for large combination of voices, string, woodwind, brass or percussion instruments. Rpt. (PR: CI)

MUN 6125 UNIVERSITY BAND (1)

MUN 6145 WIND ENSEMBLE (1)

MUN 6215 UNIVERSITY ORCHESTRA (1)

MUN 6316 UNIVERSITY SINGERS (1)

MUN 6385 UNIVERSITY-COMMUNITY CHORUS (1)

MUN 6455 PIANO ENSEMBLE (1)

MUN 6715 JAZZ ENSEMBLE (1)

MUO 6505 OPERA WORKSHOP (1)

CHAMBER MUSIC ENSEMBLES COURSES (below) Open to all university graduate students with the necessary proficiency in their performance media; study and performance of music for small combinations of voices, string, woodwind, brass or percussion instruments, and piano. Rpt. (PR: CI)

MUN 6345 CHAMBER SINGERS (1)

MUN 6416 STRING QUARTET (1)

MUN 6425 GRADUATE SAXOPHONE ENSEMBLE (1)

MUN 6429 WOODWIND QUINTET (1)

MUN 6435 BRASS CHOIR (1)

MUN 6436 BRASS QUINTET (1)

MUN 6437 HORN QUARTET (1)

MUN 6445 PERCUSSION ENSEMBLE (1)

Fine Arts

- MUN 6446 MARIMBA ENSEMBLE (1)**
- MUN 6475 COLLEGIUM MUSICUM (1)**
- MUN 6485 CLASSICAL GUITAR ENSEMBLE (1)**
- MUN 6716 JAZZ CHAMBER ENSEMBLE (1)**

MUS 5905 DIRECTED STUDY (1-4) Independent studies in the various areas of music; course of study and credits must be assigned prior to registration. Rpt. (PR: CC)

MUSIC WORKSHOP COURSES (below) Intensive study in the specialized areas indicated below; open to teachers, University students, and secondary students; credit available to qualified students. (PR: CI)

- MUS 5927 ORCHESTRA WORKSHOP (1-2)**
- MUS 5929 STRING WORKSHOP (1-2)**

MUS 6793 TECHNIQUES OF RESEARCH IN MUSIC AND MUSIC EDUCATION (3) A study of the methods of research and professional bibliography and with an individual, formal project as a terminal requirement. (PR: CC)

MUS 6906 INDEPENDENT STUDY Var. Independent study in which student must have a contract with an instructor. Rpt. S/U.

MUS 6910 DIRECTED RESEARCH Var. Rpt. S/U. (PR: GR, ML)

MUS 6971 THESIS: MASTER'S Var. Rpt.

MUS 6976 GRADUATE RECITAL (2) (PR: CC)

MUS 6994 GRADUATE INSTRUCTION METHODS (1-4) Special course to be used primarily for the training of graduate teaching assistants. Var. Rpt. to a total of 4 credits per student. S/U.

MUT 5051 GRADUATE REVIEW OF MUSIC THEORY (2) A graduate level review of basic theoretical concepts with emphasis on the common practice period. The course serves to satisfy deficiencies in music theory and as such does not count toward the degree.

MUT 6545 CRITICAL ANALYSIS-THEORY (2) A study of analytical procedures and compositional practices from the common practice period. An emphasis on consistent practices that provide a theoretical basis for composition and/or performance. (PR: CI)

MUT 6586 CRITICAL ANALYSIS-HISTORY (2) A study of historical developments of music in western civilization. Emphasis on a different historical period each semester, from the Middle Ages through the Romantic Period. Rpt. up to 6 hours. (PR: CI)

MUT 6629 ANALYTICAL SYSTEMS (2) May not be repeated. The investigation and practical application of various systems of musical analysis from traditional to the alternative systems of Schenker, Reti, Schoenberg, etc. (PR: CI)

MUT 6751 TEACHING OF MUSIC THEORY (3) Comparative study of teaching, techniques, procedures, and materials used in teaching visual and aural theory. (PR: CI)

MUT 6760 HISTORY OF MUSIC THEORY (2) Evolutionary history of the materials of western music including tuning systems, scales, modes, tonality, rhythm, counterpoint and harmony; also the exploration of treatises and theorists contributing to the evolution. (PR: CI)

APPLIED MUSIC COURSES (below) Required of all applied music majors. Private and class instruction. Required concurrent registration in major performance ensemble. (PR: Necessary competency determined by faculty jury audition.)

- MVB 5251 APPLIED TRUMPET, SECONDARY (2 or 4)**
- MVB 5252 APPLIED FRENCH HORN, SECONDARY (2 or 4)**
- MVB 5253 APPLIED TROMBONE, SECONDARY (2 or 4)**
- MVB 5254 APPLIED BARITONE, SECONDARY (2 or 4)**
- MVB 5255 APPLIED TUBA, SECONDARY (2 or 4)**
- MVK 5251 APPLIED PIANO, SECONDARY (2 or 4)**
- MVK 5253 APPLIED ORGAN, SECONDARY (2 or 4)**

- MVP 5251 APPLIED PERCUSSION, SECONDARY (2 or 4)**
MVS 5251 APPLIED VIOLIN, SECONDARY (2 or 4)
MVS 5252 APPLIED VIOLA, SECONDARY (2 or 4)
MVS 5253 APPLIED VIOLONCELLO, SECONDARY (2 or 4)
MVS 5254 APPLIED DOUBLE BASS, SECONDARY (2 or 4)
MVS 5255 APPLIED HARP, SECONDARY (2 or 4)
MVS 5256 APPLIED CLASSICAL GUITAR, SECONDARY (2 or 4)
MVV 5251 APPLIED VOICE (2 or 4)
MVW 5251 APPLIED FLUTE, SECONDARY (2 or 4)
MVW 5252 APPLIED OBOE, SECONDARY (2 or 4)
MVW 5253 APPLIED CLARINET, SECONDARY (2 or 4)
MVW 5254 APPLIED BASSOON, SECONDARY (2 or 4)
MVW 5255 APPLIED SAXOPHONE, SECONDARY (2 or 4)
MVB 6451 APPLIED TRUMPET (4)
MVB 6452 APPLIED FRENCH HORN (4)
MVB 6453 APPLIED TROMBONE (4)
MVB 6454 APPLIED BARITONE (4)
MVB 6455 APPLIED TUBA (4)
MVK 6451 APPLIED PIANO (4)
MVK 6453 APPLIED ORGAN (4)
MVP 6451 APPLIED PERCUSSION (4)
MVS 6451 APPLIED VIOLIN (4)
MVS 6452 APPLIED VIOLA (4)
MVS 6453 APPLIED VIOLONCELLO (4)
MVS 6454 APPLIED DOUBLE BASS (4)
MVS 6455 APPLIED HARP (4)
MVS 6456 APPLIED CLASSICAL GUITAR (4)
MVV 6451 APPLIED VOICE (4)
MVW 6451 APPLIED FLUTE (4)
MVW 6452 APPLIED OBOE (4)
MVW 6453 APPLIED CLARINET (4)
MVW 6454 APPLIED BASSOON (4)
MVW 6455 APPLIED SAXOPHONE (4)

MASTER COURSES (below) Study and performance of selected literature with special emphasis on style, form, and techniques; especially designed for teachers, piano majors, and talented secondary school students. (PR: Cl)

- MVK 5751 PIANO, MASTER CLASS (2)**
MVS 5750 STRINGS, MASTER CLASS (2)

STUDIO TEACHING SEMINAR (below) Emphasis on techniques used in teaching the individual student in performance. (PR: GS in performance and Cl)

- MVK 6650 STUDIO TEACHING SEMINAR-CLASS PIANO (2)**
MVK 6651 STUDIO TEACHING SEMINAR-PIANO (2)

MUSIC EDUCATION

Director: C. Doane; *Professors:* V.A. Bridges, C. Doane, J. Heller; *Assistant Professors:* J.L. Moore, J.W. Richmond.

- MUE 6080 FOUNDATIONS AND PRINCIPLES OF MUSIC EDUCATION (3)** Investigation of historical, philosophical, and psychological foundations of music education. (PR: Acceptance into Music Education Graduate Program or Cl)
- MUE 6116 ADVANCED ELEMENTARY SCHOOL MUSIC (3)** Study and appraisal of children's musical growth, curriculum plans, materials, and teaching techniques essential for the sequential development of musical learning. (PR: Acceptance in the Music Education Graduate Program or Cl)
- MUE 6145 MUSIC SUPERVISION AND ADMINISTRATION (3)** The music curriculum in relation to the total school program; staff and budgetary needs. (PR: Acceptance in the Music Education Graduate Program or Cl)

MUE 6336 ADVANCED SECONDARY VOCAL MUSIC (3) Course provides for graduate students in music education the opportunity to examine current research related to the teaching of secondary school vocal music, evaluate curricula, music materials, and teaching methods that will enable them to develop a vocal music program that emphasizes musical sensitivity. (PR: Acceptance in the Music Education Graduate Program or CI)

MUE 6347 ADVANCED MATERIALS FOR INSTRUMENTAL MUSIC EDUCATION (3) Course designed to examine published and unpublished materials, develop curricula and resources, including media hardware, appropriate for use in school instrumental music programs. (PR: Acceptance in the Music Education Graduate Program or CI)

MUE 6496 CHORAL CONDUCTING IN THE SECONDARY SCHOOLS (3) Course designed to develop essential conducting competencies required of a choral music director in the secondary schools. (PR: Acceptance in the Music Education Graduate Program or CI)

MUE 6498 INSTRUMENTAL CONDUCTING IN THE SECONDARY SCHOOLS (3) Course designed to develop skills of analysis and interpretation needed by school instrumental music teachers. Class activities include laboratory settings and performance practices. (PR: Acceptance in the Music Education Graduate Program or CI)

MUE 6906 INDEPENDENT STUDY: MUSIC EDUCATION (1-6) Independent study in which students must have a contract with an instructor. Rpt. S/U.

MUE 7815 FOUNDATIONS OF MUSICAL LEARNING AND TEACHING (3) A critical examination of current findings regarding the phenomena of the psychology of musical behaviors including the investigation of musical acoustics, the measurement of musical abilities, and a comparative study of theories of learning related to musical learning. (PR: Acceptance in the Music Education Graduate Program, a graduate level educational psychology course or its equivalent, or CI)

MUE 7835 AESTHETICS IN MUSIC EDUCATION (3) A course designed to investigate the nature of philosophical aesthetics as they relate to aesthetic and educational theories that influence programs in music education. (PR: Acceptance in the Music Education Graduate Program or CI)

THEATRE

Chairperson: D. Calandra; *Professors:* D. Calandra, N.B. Cole, W.A. Lorenzen, P. Massie, P.B. O'Sullivan; *Associate Professors:* J.W. Belt, P. Finelli, B.W. Lee, A.G. Lillethun, C. Steele, D.K. Williams; *Lecturers:* M.A. Bentley, G.B. Stevens.

THE 5902 DIRECTED READING (1-4) Readings in a topic of special interest to the student. Selection of topic and materials must be agreed upon and appropriate credit must be assigned prior to registration along with a contract with all necessary signatures. Rpt. for different topics only. (PR: CI and CC)

THE 5909 DIRECTED STUDY (1-4) Independent studies in the various areas of Theatre. Course of study and credits must be assigned prior to registration. (PR: CC)

THE 5931 SELECTED TOPICS IN THEATRE (1-8) The content of the course will be governed by student demand and instructor interest. May be lecture or class discussion or studio format. Rpt. for different topics only. (PR: CI)

College Of Medicine

ANATOMY

Chairperson: J.A.G. Rhodin; *Professors:* L.T. Chen, C.P. Phelps, J.A.G. Rhodin, H.N. Schnitzlein; *Associate Professors:* H.K. Brown, D.F. Cameron, J. Dwornik, A.M. Gerdes, D.R. Hilbelink, M.F. Nolan, S. Saporta, *Assistant Professors:* K. Muffly.

GMS 6600 CORE COURSE IN HUMAN ANATOMY (5) A survey course dealing with morphologic organization of the human body from a microscopic, macroscopic and developmental perspective. (PR: Admission to Ph.D. Program in Medical Sciences)

- GMS 6601 METHODS OF ELECTRON MICROSCOPY IN MEDICAL RESEARCH (3)** This lecture and laboratory course deals with theoretical and technical issues regarding the use of the electron microscope in biomedical research. (PR: GMS 6600, GMS 6608 or CC)
- GMS 6602 NEURAL CORRELATES OF BEHAVIOR (3)** This course focuses on the organization and function of nervous system structures that control and regulate various aspects of somatic and visceral motor behavior. (PR: GMS 6600, or CC)
- GMS 6603 COMPARATIVE NEUROANATOMY (2)** This course deals with the structure of the central nervous system in selected mammalian and submammalian species. (PR: GMS 6600, or CC)
- GMS 6604 HUMAN EMBRYOLOGY (3)** This course deals with the structural and functional development of the human from conception to birth. (PR: GMS 6600, or CC)
- GMS 6608 ADVANCED MICROSCOPIC ANATOMY (3-6)** This lecture and laboratory course examines the human organism at the microscopic level, focusing on cellular morphology and the histological organization of tissues and organ systems. (PR: GMS 6600, or CC)
- GMS 6609 ADVANCED HUMAN GROSS ANATOMY (6-12)** This lecture and laboratory course focuses on the anatomical relationships between various structures that comprise the human body. (PR: GMS 6600, or CC)
- GMS 6610 ADVANCED NEUROANATOMY (3-6)** This lecture and laboratory course deals with the structure and function of the human nervous system. The course is organized using both regional and systemic approaches. (PR: Admission to Ph.D. Program in Medical Sciences and acceptance into Anatomy Dept.)
- GMS 6611 INTRODUCTION TO ANATOMICAL RESEARCH (2)** This course consists of scheduled rotations through the laboratory of each member of the anatomy department faculty. (PR: Admission to Ph.D. Program in Medical Sciences and Anatomy Dept.)
- GMS 6612 SUPERVISED TEACHING IN HUMAN ANATOMY (3)** This course deals with the philosophy and mechanics of teaching. The course also involves supervised, practical experience in the various aspects of teaching in both the classroom and laboratory. (PR: GMS 6608, 6609, or 6610 and acceptance into the Anatomy Dept.)
- GMS 7418 DIRECTED RESEARCH** Var. Rpt. S/U. (PR: Gr. Ph.D. level)
- GMS 7930 SELECTED TOPICS (1-3)** (PR: Departmental Core Course or CC)
- GMS 7939 GRADUATE SEMINAR (1)** (PR: Departmental Core Course or CC)
- GMS 7980 DISSERTATION: DOCTORAL** Var. (PR: Admission to Candidacy)

BIOCHEMISTRY AND MOLECULAR BIOLOGY

Chairperson: L.P. Solomonson; *Professors:* W.L. Adair, M.J. Barber, D.C. Eichler, R.K. Keller, G.C. Ness, C. Ruan, L.P. Solomonson; *Associate Professors:* P.J. Neame, J.D. Sandy, M.T. Williams; *Assistant Professors:* G. Blanck, G.C. Ferreira, W.R. Gower, A.H.K. Plaas, J. Sasse; *Other Faculty:* R.V. Farese, J.C.M. Tsibris.

- BCH 5105 BIOCHEMISTRY LABORATORY ROTATIONS** Var. A course in which first year graduate students rotate through selected professor's laboratories to learn techniques, become familiar with ongoing research in the Department and facilitate the selection of a mentor.
- BCH 6135C METHODS IN MOLECULAR BIOLOGY (4)** An introduction to modern molecular biological techniques and instrumentation. Lec., Lab. (PR: BCH 6255 or CC)
- BCH 6255 MOLECULAR BIOLOGY AND MACROMOLECULAR METABOLISM (3)** A discussion of experimental systems being used to investigate the organization and expression of genetic information in eukaryotic cells. Every other year. (PR: GMS 6200C or CC)
- BCH 6275 BIOLOGICAL MEMBRANES—STRUCTURE AND FUNCTION (2)** Current concepts in the structure and function of membranes. Every other year. (PR: GMS 6200C or CC)

Medicine

- BCH 6355 LIPID METABOLISM AND REGULATION** (3) Current concepts in the metabolism of lipids in eukaryotic and prokaryotic cells. (PR: GMS 6200C or CC)
- BCH 6506 ADVANCES IN ENZYMOLOGY** (3) A discussion of the theory and mechanism of enzymological reactions with emphasis on enzymological techniques. (PR: GMS 6200C, BCH 6067 or CC)
- BCH 6627 METABOLIC BASIS OF DISEASE** (3) A discussion of the metabolic basis of major inherited diseases. (PR: GMS 6200C or CC)
- BCH 6746 PHYSICAL BIOCHEMISTRY** (3) The theory and application of modern physical biochemical techniques. (PR: GMS 6200C, BCH 6067 or CC)
- BCH 6806 BIOCHEMICAL ENDOCRINOLOGY** (2) A study of the biochemical mechanisms of polypeptide, thyroid, and steroid hormones, including sites of action. Offered every other year. (PR: GMS 6200C or CC)
- BCH 6876 CURRENT TOPICS IN BIOCHEMISTRY** (1) A Journal Club in which graduate students present research publications from recent literature. S/U (PR: Admission to Ph.D. Program in Medical Sciences or CC)
- GMS 6200C CORE COURSE IN MEDICAL BIOCHEMISTRY** (5) A comprehensive introductory course in biochemistry with emphasis on intermediary metabolism and its regulation. (PR: Admission to Ph.D. Program in Medical Sciences or CC)
- GMS 7418 DIRECTED RESEARCH** Var. Rpt. S/U. (PR: Gr. Ph.D. level)
- GMS 7930 SELECTED TOPICS** (1-3) (PR: GMS 6200C or CC)
- GMS 7939 GRADUATE SEMINAR** (1) (PR: GMS 6200C or CC)
- GMS 7980 DISSERTATION: DOCTORAL** Var. (PR: Admitted to Candidacy)

MEDICAL MICROBIOLOGY AND IMMUNOLOGY

Chairperson: H. Friedman; *Distinguished Research Professor:* R.A. Good; *Professors:* J.Y. Djeu, H. Friedman, D.G. Halkis, T.W. Klein, M. Nonoyama, S.C. Specter; *Associate Professors:* G.J. Lancz, P.M. Medveczky; L.J. Paradise; *Assistant Professors:* D.K. Blanchard, S.H. Pross.

- GMS 6100C CORE COURSE IN MEDICAL MICROBIOLOGY** (5) An in-depth survey of modern microbiology including studies of bacterial agents, parasitic and fungal organisms, viruses and immunology. (PR: Admission to Ph.D. Program in Medical Sciences)
- GMS 6101 DIAGNOSTIC MICROBIOLOGY** (3) This course consists primarily of conferences, reading assignments and laboratory training. The student is presented with the theoretical background in understanding the indigenous microflora of man and is guided in developing practical skills and familiarity with methodology in handling clinical specimens and in isolating, identifying and reporting pathogenic microorganisms. (PR: GMS 6100C or CC)
- GMS 6102 RESEARCH PLANNING AND METHODS** (3) Topics presented in this course form the foundation of the research project selected by the student and aid in avoidance of problems associated with ill-conceived experimental design. (PR: GMS 6100C or CC)
- GMS 6104 CELLULAR IMMUNOLOGY** (3) Current concepts of cellular interactions in the immune response. (PR: GMS 6100C or CC)
- GMS 6105 ADVANCES IN IMMUNOLOGY** (2) Detailed study of the cellular and biochemical events associated with the development and regulation of immunity and hypersensitivity. (PR: GMS 6100C or CC)
- GMS 6106 IMMUNOCHEMISTRY** (3) Advanced studies concerning the relationship between antigen and antibody molecules emphasizing chemical interactions. (PR: GMS 6100C or CC)
- GMS 6107 ADVANCES IN VIROLOGY** (2) The course covers regulation of viral replication and the effects of virus infection on host cell function and survival. (PR: GMS 6100C or CC)

- GMS 6110 HOST-PARASITE INTERACTIONS (2)** Lectures and discussions concerned with properties of microorganisms that pertain to their virulence and with anatomic, physiologic, and biochemical alterations occurring in animal and human hosts in response to invasion by virulent microorganisms. (PR: GMS 6100C or CC)
- GMS 6130 MOLECULAR BIOLOGY OF TUMOR VIRUSES (3)** This course is focused on tumor viruses which are involved in the pathogenesis of cancer and utilized in gene therapy as vectors. The lectures will cover current concepts of the field, specific viral genes and gene products involved in cancer, and molecular mechanisms by which viruses transform normal cells to cancer cells. (PR: Medical Microbiology)
- GMS 6182 MICROBIOLOGY LABORATORY ROTATIONS (var.)** A course in which first and second year graduate students rotate through selected professor's laboratories to familiarize the student with ongoing research in the Department and facilitate the selection of a mentor. (PR: Working knowledge of Microbiology and Immunology)
- GMS 6417 ANIMAL RESEARCH METHODS (3)** Designed to inform student of human techniques, economics, housing of animals, aseptic surgical techniques, pre and post-operative care, selection of species and legal responsibilities of investigator and institution involving federal laws governing use of animals in research. (PR: GMS 6100C or CC)
- GMS 6940 SUPERVISED TEACHING IN MEDICAL MICROBIOLOGY AND IMMUNOLOGY (1-3)** To instruct student in teaching methods that are employed in training of medical students; acquaint student with evaluation procedures used to measure academic progress of medical students. S/U. (PR: GMS 6100C or CC)
- GMS 7418 DIRECTED RESEARCH** Var. Rpt. S/U. (PR: Gr. Ph.D. level)
- GMS 7930 SELECTED TOPICS (1-3)** (PR: Departmental Core Course or CC)
- GMS 7939 GRADUATE SEMINAR (1)** (PR: Departmental Core Course or CC)
- GMS 7980 DISSERTATION: DOCTORAL** Var. (PR: Admission to Candidacy)

PATHOLOGY AND LABORATORY MEDICINE

Interim Chairperson: J.U. Balis; *Professors:* J.U. Balis, P.J. Dawson, D.G. Halkias, S.V. Nicosia, J.V. Straumfjord, Jr.; *Associate Professor:* S.A. Shelley; *Assistant Professor:* P. Baekey, K. Benson, P.R. Foulis, L.C. Moscinski.

- GMS 6111 HUMAN SYSTEMIC PATHOLOGY (3)** Gross and microscopic study of specific disease states are covered. Lecture and reading assignments cover each organ system. (PR: GMS 6300C or CC)
- GMS 6112 BIOCHEMICAL PATHOLOGY (2)** Biochemical studies are conducted in attempts to correlate chemical alterations with morphologic changes in the pathogenesis of disease. (PR: GMS 6300C or CC)
- GMS 6113 IMMUNOPATHOLOGY (2)** Examination of tissues and the use of immunologic techniques in the diagnosis of disease are conducted. (PR: GMS 6300C or CC)
- GMS 6300C CORE COURSE IN PATHOLOGY (5)** The course covers fundamentals of general pathology. (PR: Admission to Ph.D. Program in Medical Sciences)
- GMS 6301 ADVANCED GROSS PATHOLOGY (2)** Daily examination of gross materials from autopsy and surgical specimens are conducted under supervision. (PR: GMS 6300C or CC)
- GMS 6302 ADVANCED MICROSCOPIC PATHOLOGY (2)** Daily examination of histologic materials from autopsy and surgical specimens are conducted under supervision. (PR: GMS 6300C or CC)
- GMS 6303 ELECTRON MICROSCOPY OF DISEASE STATES (2)** Techniques of electron microscopy are taught with an evaluation of normal tissues and organs as well as those in different diseases. (PR: GMS 6300C or CC)

PHARMACOLOGY AND THERAPEUTICS

Chairperson: L. Wecker; *Professors:* J.J. Krzanowski, Jr., J.B. Polson, L. Wecker; *Associate Professors:* R.G. Coffey, D.F. Fitzpatrick, D.G. Morgan, J.F. Williams; *Assistant Professors:* M. Gordon, P. Gottschall, E. Hadden, K.A. Sherman.

GMS 6469 AUTONOMIC PHARMACOLOGY (3) Basic mechanisms relating to the organization and pharmacologic modification of normal and pathologic function of the autonomic nervous system (ANS). Original manuscripts which form the basis for a conceptual understanding of the ANS will be integrated with the current literature. Emphasis is placed on the adrenergic division. (PR: GMS 6400C, GMS 6200C, GMS 6500C or CC)

GMS 6500C CORE COURSE IN PHARMACOLOGY (5) A survey course designed to acquaint the student with the basic principles of pharmacology, major groups of drugs and the effects of drugs on living systems. (PR: GMS 6200C, GMS 6400C or CC)

GMS 6501 THEORETICAL PHARMACOLOGY (3) An in-depth analysis of dose-response relationships, pharmacological receptor theory, molecular consequences of drug-receptor interactions, and pharmacological approaches to the characterization of receptor populations. (PR: GMS 6500C or CC)

GMS 6502 CLINICAL PHARMACOLOGY (3) Basic and clinical aspects of major pharmacologic agents with emphasis on analgesics, antibiotics, and cardiovascular drugs. (PR: GMS 6500C or CC)

GMS 6503 METHODS IN PHARMACOLOGY (2) This course is designed to familiarize students with selected research methods in pharmacology by participation in laboratory exercises designed and supervised by the faculty. (PR: GMS 6500C or CC)

GMS 6504 IMMUNOPHARMACOLOGY (3) A study of the physiology and pharmacology of cells of the immune system, including biochemistry of activation, immunotoxicology, and clinical applications of drugs and cytokines on immunosuppression and immunostimulation. (PR: GMS 6500C, GMS 6500 or instructor's consent, or CC)

GMS 6506 THE PHARMACOLOGY OF BIOLOGICAL MEMBRANES (3) An analysis of the effects of various agents on biological membranes, with special emphasis on substances which modify ion fluxes. (PR: GMS 6500C or CC)

GMS 6507 DRUG METABOLISM (3) The course is divided into two sections. The first section presents the basic theoretical and practical application of pharmacokinetics to drug research and therapy. The second section covers the phase I and phase II reactions involved in drug biotransformation. (PR: GMS 6500C or CC)

GMS 6508 DRUG ADDICTION, TOLERANCE AND PHYSICAL DEPENDENCE (2) Current concepts of biochemical and physiological mechanisms underlying tolerance and physical dependence will be emphasized for the various classes of compounds with addictive potential. Various methods of treating addiction will also be considered. (PR: GMS 6200C, GMS 6400C or CC)

GMS 6509 HISTORY OF PHARMACOLOGY (2) The development of the discipline of pharmacology from antiquity to the present will be explored. Contributions of key investigators and the history of the development of specific drug classes will be emphasized. (PR: GMS 6500C and CC)

GMS 6510 TOXICOLOGY (3) Course material presents a survey of the area of toxicology. Principles of toxicological investigation, toxicology of the organ systems, and toxicology of various classes of intoxicants are presented. Laboratory work includes selected areas to demonstrate principles of toxicology. (PR: GMS 6500C and CC)

GMS 7418 DIRECTED RESEARCH Var. Rpt. S/U. (PR: Gr. Ph.D. level)

GMS 7930 SELECTED TOPICS (1-3) (PR: Departmental Core Course or CC)

GMS 7939 GRADUATE SEMINAR (1) (PR: Departmental Core Course or CC)

GMS 7980 DISSERTATION; DOCTORAL Var. (PR: Admission to Candidacy)

PHYSIOLOGY AND BIOPHYSICS

Interim Chairperson: B.G. Lindsey; *Professors:* C.H. Baker, D.L. Davis, B.G. Lindsey, D. McMillan, J.M. Price, R. Shannon, D. Vesaly; *Associate Professors:* J.R. Dietz, S.J. Nazian, P. Rao; *Assistant Professor:* D. McLean, B. Sokolowski, D. Weiss.

GMS 6400C CORE PHYSIOLOGY (5) A study of the physiologic principles and control mechanisms of the organ systems of the body. (PR: Admission to Ph.D. Program in Medical Sciences or CC)

GMS 6401 KIDNEY, FLUIDS AND ELECTROLYTES (4) A study of the mechanisms controlling salt and water excretion, including both intrarenal and extrarenal factors regulating renal function. (PR: GMS 6400C or CC)

GMS 6402 RESPIRATION (4) Provides advanced study of most areas of lung function and control of breathing. (PR: GMS 6400C or CC)

GMS 6403 ENDOCRINE MECHANISMS (4) An examination of current concepts of endocrine and neuroendocrine systems. Emphasis will be placed on control at the organismal and organ system levels. (PR: GMS 6400C or CC)

GMS 6404 SYSTEMS NEUROPHYSIOLOGY (4) Considers current topics in systems neurophysiology including sensory processing, motor control, and learning. Literature in both invertebrate and vertebrate animal models and neural network simulations is considered. (PR: GMS 6400C or CC)

GMS 6407 SMOOTH AND SKELETAL MUSCLE (4) Covers mechanisms of contraction and their relationship of mechanical behavior in skeletal muscle and smooth muscle. New theories of contraction will be presented. Laboratory work on smooth muscle mechanics will be required. (PR: GMS 6400C or CC)

GMS 6409 PERIP/CIRCUL/HEMODY (4) A study of the hemodynamic principles controlling flow, capillary exchange, and control mechanisms at the small blood vessel level in different vascular beds. (PR: GMS 6400C or CC)

GMS 6410 CARDIOVASCULAR REGULATION (4) A study of the hemodynamic principles controlling cardiac output, pressure-flow relationships, and venous return in the pulmonary and systemic circulations. (PR: GMS 6400C or CC)

GMS 6413 PHYSIOL/BASES/CARDIO (4) A study of the factors involved in cardiac-output and its control. (PR: GMS 6400C or CC)

GMS 7418 DIRECTED RESEARCH Var. Rpt. S/U. (PR: Gr. Ph.D. level)

GMS 7930 SELECTED TOPICS (1-3) (PR: Departmental Core Course or CC)

GMS 7939 GRADUATE SEMINAR (1) (PR: Departmental Core Course or CC)

GMS 7980 DISSERTATION: DOCTORAL Var. (PR: Admission to Candidacy)

College Of Nursing

NURSING

Dean: J.A. Plawecki; *Professor Emeritus:* I. King, V. Ross; *Professors:* D. Hymovich, S. McMillan, L. Moody, O. Riggin; *Associate Professors:* S. Boyd, C. Burns, J. Gregory, C. Lengacher, B. Redding, C. Selleck, S. Torres; *Assistant Professors:* C. Gilbert, P. Gorzka, D. Heinemann, J. Larson-Presswalla, C. Long, L. Lowry, A. Leach McMahon, M. Rose, R. Sisson, M. Tittle, M.L. VanCott.

NGR 5935 ETHICS IN HEALTH CARE (3) Theories and concepts of ethics as applied to health care are presented through lecture and discussion. Contemporary issues are analyzed in terms of their implications for health care providers. Majors and non-majors. (CI)

NGR 6030C ADULT HEALTH ASSESSMENT (3) Advanced Physiology prerequisite or concurrent. Emphasizes advanced physical and psychological clinical assessment skills and includes a theoretical and practical approach based on nursing process. (CI)

Nursing

NGR 6050 SPECIALIZED TECHNIQUES IN CHILD HEALTH ASSESSMENT (3) Designed to teach the reliable administration and interpretation of the NCAST II instruments. Skill is gained in the use of four instruments. Inter-observer reliability will be achieved through observation of parent-child interaction.

NGR 6096 ONCOLOGY NURSING CONCEPTS (3) Provides advanced oncology nursing content with a focus on nursing management of physical problems resulting from cancer and its treatment. (CI)

NGR 6097 PEDIATRIC ONCOLOGY NURSING (2) This course emphasizes basic concepts occurring in the pathogenesis of pediatric oncology and hematology. Also emphasized is the role of the advanced practice nurse in relation to the epidemiology and pathophysiology of specific types of cancers.

NGR 6120 MANAGEMENT IN CLINICAL NURSING PRACTICE (2) Explores management concepts including a variety of theoretical and clinical approaches to the nursing management. (CI)

NGR 6121 THEORY DEVELOPMENT IN NURSING (3) Focuses on theory development in nursing, including metatheoretical issues and analysis of conceptual models and theories in nursing. (CI)

NGR 6131 CONCEPTUAL BASIS FOR SPECIALIZED NURSING PRACTICE (3) Exploration of selected concepts that are essential to all areas of specialized nursing practice. (PR or concurrent: NGR 6121)

NGR 6140 ADVANCED PHYSIOLOGIC ASSESSMENT (4) Focuses on cellular physiology and the feedback and control mechanism of bodily functions at the cellular, organ, and system level. (CI)

NGR 6141C DECISION MAKING IN ADULT HEALTH NURSING (3) A conceptual approach that focuses on disease mechanisms to establish a sound scientific base for clinical assessment and management of common health problems of adult patients. (PR: NGR 6140 or CI)

NGR 6142 PATHOBIOLOGY OF NEOPLASIA (3) Emphasizes basic concepts of cellular differentiation and the abnormal cytologic changes occurring in the pathogenesis of neoplasia. Also emphasized is the role of the advanced practice nurse in relation to the role of the immune system and diet in oncogenesis, and the epidemiology and pathology of specific types of cancers. (CI)

NGR 6195 FACTORS INFLUENCING HEALTH CARE (3) Focuses on contemporary social, political, and economic issues related to health care and legal-ethical concepts applicable to the decision-making process in nursing practice, education, and research. (CI)

NGR 6199 PHARMACOLOGY FOR ADVANCED NURSE CLINICIANS (3) This course for advanced nurse clinicians is a learning experience designed to provide a current knowledge base and to promote and encourage life-long learning in pharmacology. Lectures, interactions with faculty, and examinations are utilized to stimulate and to evaluate the knowledge base of students in the discipline of pharmacology. (PR: NGR 6140)

NGR 6210 CLINICAL NURSING MANAGEMENT OF THE WELL ADULT (3) Advanced course in specialized nursing practice focuses on selected concepts applied to health, health promotion, health maintenance, and disease prevention in a variety of settings. (PR: NGR 6121; NGR 6140, NGR 6141C, NGR 6131; CI)

NGR 6210L PRACTICUM IN ADULT HEALTH: PROMOTION & PREVENTION (1-6) Clinical experience in functional role and selected area of specialization emphasizing health concepts applied to adults. (PR: NGR 6121; NGR 6140, NGR 6141C, NGR 6131 and concurrent NGR 6201, CI)

NGR 6211 CLINICAL MANAGEMENT OF ADULTS WITH ALTERATIONS IN HEALTH (3) Advanced course in specialized nursing practice focuses on selected concepts applied to health

restoration and rehabilitation in a variety of settings. (PR: NGR 6121; NGR 6140, NGR 6131, NGR 6141C, CI)

NGR 6211L PRACTICUM IN ADULT HEALTH NURSING: ILLNESS AND REHABILITATION (1-6) Clinical experience in functional role and selected area of specialization emphasizing health concepts applied to adults with significant health problems. (PR: NGR 6121; NGR 6140; NGR 6141C, NGR 6131 and concurrent NGR 6211, CI)

NGR 6250 BIOPSYCHO-SOCIAL AGING AND HEALTH PROMOTION (3) This foundation course in gerontology nursing emphasizes the biopsychosocial aspects of nursing of the well-elderly, including functional assessment, at risk assessment and health promotion.

NGR 6251 INTERACTION OF ELDERLY PERSONS WITH THE ENVIRONMENT (3) Theoretical and clinical experience that emphasizes the health maintenance and environmental interaction of the well-elderly. (CI)

NGR 6253L GERONTOLOGY NURSING PRACTICUM I (3-4) Clinical practicum that emphasizes effective nursing intervention in acute and chronic illness in the elderly, including: treatment of illness, prevention of complications, rehabilitation, and health education. (CI)

NGR 6254 GERONTOLOGY NURSING PRACTICUM II (3-4) Practicum experience emphasizes leadership/management principles that assist the nurse in health care delivery to the elderly. (CI)

NGR 6260 ACUTE AND CHRONIC HEALTH PROBLEMS OF THE AGING (3) Provides specialized gerontology nursing content. Learning activities include lecture, discussion, audiovisuals, written group presentations and self-study. (CI)

NGR 6280 SOCIAL AND ECONOMIC FACTORS IN GERONTOLOGY NURSING (3) Analyze and evaluate multilevel social and economic factors affecting the health care of the elderly. (CI)

NGR 6505 THEORETICAL FOUNDATIONS IN PSYCHIATRIC/MENTAL HEALTH NURSING (3) Focuses on the theoretical basis for specialty practice in psychiatric mental health nursing, including personality, communication, developmental, nursing and psychotherapy theories and models relevant to the specialty practice of psychiatric mental health nursing. Interpersonal theories receive emphasis. (CI)

NGR 6506 DYSFUNCTIONAL PATTERNS OF BEHAVIOR (3) Focuses on multidimensional factors that impact the specialized practice of psychiatric mental health nursing in a variety of settings. Content includes an analysis of theories of psychopathology, behavioral patterns of clients, therapeutic interventions and current research. (PR: CI)

NGR 6507 THERAPIES IN PSYCHIATRIC/MENTAL HEALTH NURSING (2) Focuses on the theoretical and conceptual foundation for the specialized practice of psychiatric mental health nursing with individuals, including assessment and therapeutic interventions of the clinical nurse specialist role as a member of the inter-disciplinary team. (PR: NGR 6505, NGR 6506 or CI)

NGR 6508 PSYCHIATRIC/MENTAL HEALTH NURSING WITH GROUPS (2) Focuses on the theoretical and conceptual foundation for the specialized practice of psychiatric mental health nursing with groups. Group and organizational theories, relevant leadership styles, strategies, and techniques are analyzed. Research relevant to group therapy and group interventions is examined. (PR: NGR 6505, NGR 6506, NGR 6507 or CI)

NGR 6509 PSYCHIATRIC/MENTAL HEALTH NURSING WITH FAMILIES (2) Focuses on the theoretical and conceptual foundation for the specialized practice of psychiatric mental health nursing with families. Family theories, conceptual models and intervention strategies with families in a variety of settings are analyzed. Current family research is examined. (PR: NGR 6505, NGR 6506, NGR 6507, or CI)

NGR 6511 GEROPSYCHIATRIC NURSING (3) Focuses on theoretical implications and foundations for providing geropsychiatric nursing care for the elderly who have been diagnosed or have potential emotional/mental problems with emphasis of various therapies in a variety of clinical settings.

- NGR 6539C PSYCHOSOCIAL ASPECTS OF CANCER (3)** Provides knowledge and skills to assist the specialist in cancer nursing to cope with the psychosocial ramifications of cancer for the client and family.
- NGR 6566L PRACTICUM I: PSYCHIATRIC/MENTAL HEALTH NURSING WITH INDIVIDUALS (2-4)** Focuses on the application of theoretical and conceptual knowledge of working with individual clients experiencing acute and/or chronic psychiatric problems. Various aspects of the clinical specialist role as a member of the interdisciplinary team are practiced. Seminar and individual supervision. (PR: NGR 6505, NGR 6506, concurrent with NGR 6131)
- NGR 6567L PRACTICUM II: PSYCHIATRIC/MENTAL HEALTH NURSING WITH GROUPS (2)** Focuses on the application of theoretical and conceptual knowledge of working with traditional and support psychotherapeutic groups in a variety of institutional and community settings. Comparative learning experiences are examined through individual supervision and seminar discussions. (PR: NGR 6505, NGR 6506, NGR 6507, NGR 6566L, or CI, concurrent with NGR 6508)
- NGR 6568L PRACTICUM III: PSYCHIATRIC/MENTAL HEALTH NURSING WITH FAMILIES (2)** Focuses on the application of theoretical and conceptual knowledge of working with dysfunctional families in a variety of settings including specialized psychiatric mental health treatment settings, other community agencies, and homes. Individual learning experiences are examined through supervision and seminar discussions. (PR: NGR 6505, 6506, 6507, 6566L, or CI, concurrent with NGR 6509)
- NGR 6602C STRATEGIES FOR COMMUNITY HEALTH NURSING (4)** Examines the variables that influence and guide community health nursing practice, and the application of relevant nursing concepts and theories. (PR: Concurrent: NGR 6121 or CI)
- NGR 6603L PRACTICUM IN COMMUNITY HEALTH NURSING (1-6)** Focuses on clinical application of community health nursing concepts in selected community settings. (PR: Concurrent NGR 6121, 6602C, 6738, or CI)
- NGR 6609C MANAGEMENT OF PRACTICE IN FAMILY HEALTH NURSING (2)** Focuses on the analysis and application of management/leadership techniques and on the role diversity of the Family Health Nurse Specialist, health care policy, the health care system, and delivery of health care services to families and children. Students examine strategies for influencing both nursing and health care policy relevant to family health. (PR or concurrent: NGR 6121 or CI)
- NGR 6610C CONCEPTUAL BASIS OF FAMILY HEALTH NURSING (3)** Analyzes selected family theories, related models and concepts which provide the basis for Family Health Nursing. Family structure and function, family assessment techniques, methods of data analysis, and issues and factors which influence the health of families are explored. Didactic and clinical. (PR or Concurrent: NGR 6121)
- NGR 6617L PRACTICUM IN FAMILY CENTERED NURSING (6)** (A total of 6 cr. hrs. are required; practicums may range from 1-6 cr. hrs. per semester). This course focuses on the development of the clinical competencies of the Family Health Nurse Specialist within a delineated area of subspecialty. (PR or concurrent: NGR 6610C, NGR 6931, Client Assessment)
- NGR 6630 FAMILY CENTERED NURSING CARE (4)** Focuses on the diagnosis and management of common health problems of families and individuals across the life span for those students whose subspecialty is family health care. (PR or concurrent: NGR 6140, NGR 6610C, NGR 6931, Client Assessment)
- NGR 6631 FAMILY CENTERED NURSING CARE OF CHILDREN (4)** Focuses on the health and nursing care of children and their families in complex, interrelated health care service systems for those students whose subspecialty is child health care. Emphasis is placed on case management. (PR or Concurrent: NGR 6140, NGR 6610C, NGR 6931, Advanced Assessment)
- NGR 6703 ADVANCED ROLE DEVELOPMENT (3)** Combined lecture/seminar focusing on an exploration of role theory and its application to advanced nursing roles. (CI)

NGR 6710 CURRICULUM AND INSTRUCTION IN NURSING EDUCATION (2) Trends and issues in curriculum development, faculty role, instructional strategies, internal and external factors influencing decisions in curriculum and instruction and implications for their utilization in nursing programs. (C)

NGR 6712 NURSING EDUCATION IN INSTITUTIONS OF HIGHER EDUCATION (2) Focuses on examination of the historical development of nursing education within higher education, issues in higher education and their effect on nursing education, and the future role of nursing education in institutions of higher education. (C)

NGR 6738 CONTEMPORARY PUBLIC/COMMUNITY HEALTH NURSING: ISSUES & TRENDS (2) Analyzes the relationship between public health issues and public/community health nursing practice. Identifies specialized nursing roles in public health practice and factors that influence these roles. (PR or Concurrent: NGR 6121 or C)

NGR 6790 CONSULTATION/LIAISON IN PSYCHIATRIC/MENTAL HEALTH NURSING (3) Emphasizes evolution of the consultation/liaison role for advanced nurse practitioners with emphasis on the consultation process in a variety of clinical settings. (PR: Clinical and theoretical courses for clinical concentration, or C)

NGR 6800 NURSING RESEARCH (3) Includes an overview of research in nursing, identification of researchable problems, design and analysis of research proposals, and research methodologies and strategies applicable to nursing. (PR: NGR 6121)

NGR 6822 MEASUREMENT FOR NURSING EDUCATION AND RESEARCH (3) Course purposes are to increase skill in measurement of nursing variables as part of the research process, to enhance ability of nurse educators to identify or develop valid and reliable measurement instruments for evaluation of students, clients and educational programs. (C)

NGR 6905 INDEPENDENT STUDY (1-6) Specialized individualized study determined by students' needs and interests; requires an approved contract with a faculty member. S/U.

NGR 6915 DIRECTED RESEARCH (1-3) Builds on knowledge gained in NGR 6800 and specialty concentration by participating in a research project under the direction of selected faculty. (PR: NGR 6800)

NGR 6931 SELECTED TOPICS (1-4) Seminars for the analysis and discussion of selected issues in nursing of topical concern to student and faculty.

NGR 6947 PRACTICUM IN NURSING EDUCATION (1-4) Instructional experiences that utilize educational concepts and instructional strategies in a variety of educational settings in nursing. (PR: NGR 6822, NGR 6710, and NGR 6712; C)

NGR 6948 ONCOLOGY NURSING PRACTICUM I (3) Provides experience with all aspects of advanced oncology nursing practice with a focus on direct care in appropriate settings. Emphasis is on the nurse's role in prevention, detection, treatment, and rehabilitation. (C)

NGR 6949 ONCOLOGY NURSING PRACTICUM II (3) Requires synthesis of all knowledge and skills acquired earlier in the program. Emphasis is on the roles of the oncology nurse specialist, including those of expert clinician, consultant, teacher, researcher and administrator. (PR: NGR 6948)

NGR 6971 THESIS (Minimum of 6 hrs. for thesis option) Var. Rpt. (PR: NGR 6800)

College Of Public Health

GENERAL PUBLIC HEALTH COURSES

HSC 4933 SPECIAL TOPICS IN PUBLIC HEALTH (1-6) Content will be governed by student demand and instructor interest. May be repeated for credit for different topics only. (PR: C)

PHC 6907 INDEPENDENT STUDY: PUBLIC HEALTH (1-3) Independent study determined by the student's needs and interests. Rpt. if subjects vary. S/U. (PR: C)

- PHC 6930 PUBLIC HEALTH SEMINAR (1)** Interaction of faculty, students and select health professionals in relation to public health issues and research. Rpt. to 3 hours. S/U. (PR: GS)
- PHC 6934 SELECTED TOPICS IN PUBLIC HEALTH (1-6)** The content of this course will be governed by student demand and instructor interest. Rpt.as topics differ. (PR: CI)
- PHC 6945 SUPERVISED FIELD EXPERIENCE (1-12)** Internship in a public health agency or setting. Application of administrative, program, and/or research models now employed in government and private public health organizations. S/U. (PR: CI)
- PHC 6971 THESIS: MASTER OF SCIENCE IN PUBLIC HEALTH (1-19)** Research-oriented study for students seeking the M.S. degree in Public Health. Rpt.
- PHC 6977 SPECIAL PROJECT: MPH (3)** Indepth study of a selected issue in public health. A topic will be selected according to student's needs and interests. S/U. (PR: CI)
- PHC 7908 SPECIALIZED STUDY IN PUBLIC HEALTH (1-9)** Demonstration of an indepth study in a specialized public health area. This study may be used to address areas where a student needs to demonstrate a higher level of competency. (PR: CI)
- PHC 7910 DIRECTED RESEARCH (1-19)** Advanced research design and application. Rpt. S/U. (PR: GS)
- PHC 7935 SPECIAL TOPICS IN PUBLIC HEALTH (1-3)** Content will include recent or current issues in public health. Rpt. as topics vary. (PR: CI)
- PHC 7980 DISSERTATION (1-19)** Rpt. (PR: Admission to candidacy)

DEPARTMENT of COMMUNITY and FAMILY HEALTH

Chairperson: S.N. Graven; *Professors:* S.N. Graven, R.J. McDermott, P. Marty; *Associate Professors:* R.G. Bruce, J. Coreil, M.L. Coulter, E. Gulitz, D. Taren; *Assistant Professors:* C. Bryant, K. Liller; *Other Faculty:* M. Cupoli, C. Gweda, J.N. Henderson, H. Jacobson, G. Lopez, E. Lucker, F. Paris, K. Perrin.

- HSC 2100 CONTEMPORARY HEALTH SCIENCE (3)** A comprehensive approach to health concerns and problems in contemporary society, including methods of assessing individual health needs.
- HSC 4203 INTRODUCTION TO PUBLIC HEALTH (3)** A survey of policies and programs in public/community health with emphasis on specific needs and problems of Florida.
- PHC 6410 SOCIAL AND BEHAVIORAL SCIENCES APPLIED TO HEALTH (3)** A review of the conceptual, empirical, and theoretical contributions of the Social and Behavioral Sciences as they contribute to an understanding of health and illness. (PR: CI)
- PHC 6533 HEALTH PROGRAM DEVELOPMENT AND CHANGE PROCESS (3)** A study of approaches to program development, implementation and management of change process in maternal and child health. (PR: CI)
- PHC 7708 APPLIED RESEARCH METHODS IN COMMUNITY AND FAMILY HEALTH (3)** A detailed study of philosophical questions and applied techniques of research in community and family health. A project oriented course to prepare students to conduct their own independent research. (PR: PHC 6050, PHC 6700, PHC 6707, or CI)

MATERNAL and CHILD HEALTH

- PHC 6530 MATERNAL AND CHILD HEALTH I: ISSUES AND CONCEPTS (3)** The purpose of this course is to provide for the foundation of Maternal and Child health for students who will be concentrating in this area, or as an overview for non-majors. (PR: CI)
- PHC 6531 HEALTH OF HANDICAPPED CHILDREN (3)** A study of causative factors, characteristics, care needs and programs for handicapped children with emphasis on health and health care issues. (PR: CI)

PHC 6532 WOMEN'S HEALTH ISSUES IN PUBLIC HEALTH (3) A public health orientation of women's health needs with their impact on society, family, and children. (PR: CI)

PHC 6534 CHILD HEALTH PROGRAMS IN CARE SETTINGS (3) Advanced analysis of factors contributing to impact on children of health and care settings such as foster care, hospital care, and day care. Focus includes epidemiology of child health problems, program evaluation, administration and policy assessment. (PR: CI)

PHC 6535 INTERNATIONAL MATERNAL AND CHILD HEALTH (3) The course examines current priorities for improving the health of mothers and children in developing countries. The emphasis is on understanding MCH issues within the larger context of primary health care and sociocultural factors which influence behavior. (PR: CI)

PHC 6536 POPULATION AND COMMUNITY HEALTH (3) Population information and applications in health programs. Topics include: population growth and decline, structure, distribution, fertility, morbidity and mortality, and migration as applied to maternal, child and community health. (PR: PHC 6410 or CI)

PHC 6537 MATERNAL AND CHILD HEALTH II: CASE STUDIES IN MCH PROGRAMS, POLICIES AND RESEARCH (3) Capstone course intended to provide unifying opportunity to utilize concepts, principles, and skills learned in other MCH and public health courses. (PR: PHC 6530, PH Core Courses, or CI)

PUBLIC and COMMUNITY HEALTH EDUCATION

HSC 4541 HUMAN STRUCTURE AND FUNCTION (3) Major concepts of the structure and function of the human body systems and methods by which these concepts may be taught. (PR: Fundamentals of Biology/Lab or CI)

HSC 4554 SURVEY OF HUMAN DISEASES (3) An overview of the nature, types, and mechanisms of diseases of the major body systems. (PR: Fund. of Biology with Lab or CI)

HSC 5319 PROBLEMS OF SCHOOL AGE POPULATION (3) Study of health problems and needs of school age students, including a health status screening laboratory.

PHC 6500 FOUNDATIONS OF HEALTH EDUCATION (3) Study of the historical, social and cultural factors influencing health behavior and the practice of health education. (PR: CI)

PHC 6505 HEALTH EDUCATION PROGRAM PLANNING (3) Analysis of the planning and development process for health education programs. (PR: PHC 6500 or CI)

PHC 6506 COMMUNITY HEALTH EDUCATION (3) Analysis of major community health problems, their causes, the roles of individuals, community institutions, and government in effecting solutions. Emphasis is upon participation and organization for community health. Class and field work sessions. (PR: PHC 6500 or CI)

PHC 6507 HEALTH EDUCATION METHODS (3) Prepares students to analyze and incorporate effective content and process in health education program delivery. Course not restricted to health education majors. (PR: PHC 6500 or CI)

PHC 6508 CASE STUDIES IN HEALTH EDUCATION (3) An assessment of selected case studies in Health Education with an emphasis on application, analysis, and evaluation of health education theory and practice to various public, private, health care, and school settings. (PR: PHC 6500, 30 hours toward MPH, or CA)

PHC 6707 EVALUATIVE APPROACHES TO COMMUNITY AND FAMILY HEALTH EDUCATION PROGRAMS (3) Examination of research and evaluation issues in health education. Includes methods for designing studies in schools and other educational settings in the community. (PR: PHC 6500 and PHC 6505 or PHC 6530 or CI)

PUBLIC HEALTH NUTRITION

PHC 6521 PUBLIC HEALTH NUTRITION An analysis of nutritional issues concerned with health and disease. Biological and social interactions are studied as they relate to the development, monitoring, and evaluation of community nutrition intervention programs. (PR: CI)

PHC 6522 THE BIOLOGICAL ROLE OF NUTRITION IN HEALTH (3) Advanced study of the biochemical and physiological roles of nutrition in health and disease. (PR: HUN 3201, ZOO 3713C, PCB 4743, BCH 3033, or CI)

PHC 6523 POLICIES AND PRACTICES IN MATERNAL AND CHILD NUTRITION (3) Study of nutrition policies and practices in maternal and child health from pregnancy through the pre-school years. Focus on issues concerned with risk identification, interventions and outcome evaluations. (PR: CI)

PHC 6524 PUBLIC HEALTH NUTRITION FOR THE ADULT AND AGING POPULATION (3) Study of policies and practices of nutrition in health promotion and disease prevention in adults. Focus on issues concerned with risk identification, nutrition interventions and outcome evaluations. (PR: PHC 6521, PHC 6522, or CI)

PHC 6526 NUTRITION ASSESSMENT OF INDIVIDUALS AND COMMUNITIES (3) Comparative study of anthropometric, biochemical, dietary, clinical and socioeconomic indicators of nutritional status including the differential use of these indicators for individuals and communities. (PR: PHC 6521, PHC 6522, or CI)

PHC 6527 CASE STUDIES IN PUBLIC HEALTH NUTRITION (3) Capstone course intended to provide a unifying opportunity to utilize concepts, principles and skills learned from other public health nutrition courses. (PR: CI)

DEPARTMENT of ENVIRONMENTAL and OCCUPATIONAL HEALTH

Chairperson: S.M. Brooks; *Professors:* S.M. Brooks, Y. Hammad, A. Kulkarni, A. Vickery; *Associate Professors:* T. Bernard, E.E. Kalmaz, I. Richards; *Assistant Professors:* B. Kwa, J. Rose; *Visiting Associate Professor:* E. Szonntag; *Visiting Assistant Professor:* D. Woodbridge; *Other Faculty:* F. Dukas-Dobos, R. Freeman, A. Koplin, M. Montgomery, P. Rentos, C.D. Riggs, B. Yangco.

HSC 4223 PREVENTIVE HEALTH PRACTICES IN THE WORKPLACE (3) Content focuses on a survey of health problems and concerns as they exist in a variety of work environments. No prior education or experience in this area is required. (PR: CI)

HSC 6556 PATHOBIOLOGY OF HUMAN DISEASE I (3) A basic study of broad pathobiological areas of biological injury, genetic and inborn errors of metabolism, and host-parasite relationships. In addition, the pathobiology of human disease is closely related to general biology in order to provide a strong foundation for the public health student. (PR: CI)

HSC 6557 PATHOBIOLOGY OF HUMAN DISEASE II (3) Overview of the distinct pathogenesis and etiology and selected acute and chronic diseases and their preventive aspects and impacts on the health care system. Provides basic knowledge of disease and illness patterns and their relationship to health planning. (PR: HSC 6556 and CI)

PHC 6301 ANALYSIS OF WATER AND WASTEWATER (3) A study of treatment systems for water and wastewater. Emphasis is given to problems encountered in current technologies, health effects, and environmental impact. (PR: CHM 3610C or CI)

PHC 6302 MUNICIPAL SANITATION (3) A study of environmental sanitation activities, programs, and issues of local government. (PR: PHC 6357 or CI)

PHC 6303 COMMUNITY AIR POLLUTION (3) A study of air pollutants. Emphasis is given to sources and control technologies as well as health effects and environmental impact. (PR: CHM 3610C or CI)

PHC 6304 ENVIRONMENTAL HEALTH MICROBIOLOGY (3) Techniques for isolation and enumeration of microorganisms of health significance from food and aquatic sources. (PR: MCB 3010C or CI)

PHC 6305 CHEMICAL METHODS IN ENVIRONMENTAL HEALTH (3) Techniques used in quantitative and qualitative chemical analyses for determining water quality. (PR: CHM 3610C or CI)

- PHC 6306 RADIATION HEALTH PRINCIPLES (2)** An analysis of the basic concepts of radiation and the protection of individuals and population groups from ionizing and non-ionizing radiation as well as establishing relationships between radiation exposure and biological damage. (PR: CI)
- PHC 6310 ENVIRONMENTAL OCCUPATIONAL TOXICOLOGY (3)** A study of the nature of industrial and environmental toxins and toxic by-products, generated and distributed, leading to disease, disability, or death, and the control measures available. Lecture and appropriate laboratory methods are used. (PR: CI)
- PHC 6350 OCCUPATIONAL HEALTH RISK ASSESSMENT (3)** A study of methods for assessing potential hazards associated with occupational health environments. Evaluation of techniques for the development of comparative rankings of problem areas. (PR: PHC 6050 or CI)
- PHC 6355 OCCUPATIONAL HEALTH (3)** The study of historical, epidemiologic, administrative, legal, and clinical aspects of worker's health in the workplace. (PR: CI)
- PHC 6356 INDUSTRIAL HYGIENE (2)** A study of the recognition, evaluation, and control of the workplace affecting the health of employees. (PR: CI)
- PHC 6357 ENVIRONMENTAL AND OCCUPATIONAL HEALTH (3)** The study of major environmental and occupational factors that contribute to development of health problems in industrialized and developed countries. (PR: CI)
- PHC 6358C INDUSTRIAL HYGIENE—PHYSICAL AGENTS (2)** Recognition, evaluation, and control of physical agents in the workplace. Laboratory exercises and field surveys will be conducted in addition to class lectures. Lec/Lab. (PR: PHC 6356 and 1 year college physics or CI)
- PHC 6360 SAFETY MANAGEMENT PRINCIPLES AND PRACTICES (2)** A study of safety management as it relates to hazard identification, accident investigation and training, enabling the safety manager to reduce costs to business, industry, and government. (PR: CI)
- PHC 6361 INDUSTRIAL ERGONOMICS (2)** Systems logic and methodology for assessing the potential impact of work environments on the health and safety of workers; application of occupational ergonomics and human factors to the design and evaluation of complex work environments. (PR: PHC 6360 or CI)
- PHC 6362 INDUSTRIAL VENTILATION (2)** Basic principles of fluid mechanics and exhaust ventilation are employed in the design and evaluation of the performance of industrial ventilation systems. (PR: PHC 6356)
- PHC 6363 INDUSTRIAL NOISE AND VIBRATION (2)** Review of basic physics and physiological responses associated with excessive noise and vibration and methods for their assessment and control in the work environment. (PR: CI)
- PHC 6364 INDUSTRIAL HYGIENE ASPECTS OF PLANT OPERATIONS (2)** Field visits to industrial plants will be conducted so as to familiarize students without prior experience to the health hazards associated with various processes and the methods of control employed to prevent excessive exposures. (PR: PHC 6356 or CI)
- PHC 6365 ANALYTICAL METHODS IN INDUSTRIAL HYGIENE I (2)** Analytical measuring methodologies and instruments employed in evaluating exposure to chemical agents are described and detailed. Hands-on laboratory exercises permit full familiarization in the calibration and use of these instruments. Problem solving sessions result in the development of a routine for the proper handling of laboratory data. (PR: PHC 6356 or CI)
- PHC 6366 ANALYTICAL METHODS IN INDUSTRIAL HYGIENE II (2)** Analytical measuring methodologies and instruments employed in evaluating exposure to physical agents are described and detailed. Hands-on laboratory exercises permit full familiarization in the calibration and use of these instruments. Problem solving sessions result in the development of a routine for the proper handling of laboratory data. (PR: PHC 6356 or CI)

PHC 6425 LEGAL AND REGULATORY ASPECTS OF ENVIRONMENTAL AND OCCUPATIONAL HEALTH (3) A study of pertinent federal and state statutes and regulations affecting health of the environment and workplace. (PR: PHC 6355 or CI)

PHC 6510 EXOTIC AND INFECTIOUS DISEASE (3) A study of human infectious disease with particular emphasis on diseases caused by parasites, viruses, bacteria, and fungi found in subtropical and tropical environments. (PR: CI)

PHC 6511 TROPICAL HEALTH IMMUNOLOGY (3) Immunology as applied to public health. Emphasis is on applications of immunology and immunological techniques used in surveillance, prevention, and control of public health problems. (PR: CI)

PHC 6512 VECTORS OF HUMAN DISEASE (3) Biology of the vectors of human disease: major groups include the arthropods, molluscs, and mammals. Emphasis on the ecology of the vectors and their transmission of pathogens as they relate to public health. (PR: CI)

PHC 6513 PUBLIC HEALTH PARASITOLOGY (3) Human diseases caused by parasite infection with emphasis on diseases related to environmental exposure and of public health importance. Major groups include the protozoans, cestodes, trematodes, and nematodes of human disease. (PR: CI)

PHC 6562 FUNCTIONS OF PUBLIC HEALTH LABORATORIES (3) Study of public health laboratory activities, investigations, administrative operations and current techniques through laboratory and lecture experience. (PR: CI)

DEPARTMENT of EPIDEMIOLOGY and BIostatISTICS

Chairperson: P.E. Leaverton; *Professor:* C.H. Brown, P.E. Leaverton; *Associate Professors:* J.L. Cresanta; *Assistant Professors:* M. Bayona, N.A. Brandenburg; *Other Faculty:* R. Blair, R. Calder, G.H. Lyman, M. Magenheim, T. Papadimos, S. Schler, D. Schocken, M.H. Wilder, J.J. Witte.

PHC 6000 EPIDEMIOLOGY (3) Study of epidemiological methods to evaluate the patterns and determinants of health and diseases in populations. (PR: CI)

PHC 6006 EPIDEMIOLOGY OF DISEASES OF MAJOR PUBLIC HEALTH IMPORTANCE (3) A study of the distribution and determinants of specific infectious and non-infectious human diseases of public health importance using epidemiological methods. (PR: PHC 6000, PHC 6050 and CI)

PHC 6007 CANCER EPIDEMIOLOGY (3) The course will consider the extent of the cancer problem, present the epidemiology of the major cancer sites, including those of the respiratory, digestive and reproductive systems, and evaluate the potential for primary and secondary preventive efforts. (PR: PHC 6000 or CI)

PHC 6008 CARDIOVASCULAR DISEASE EPIDEMIOLOGY (3) A review of the major issues in cardiovascular disease epidemiology, including trends, the extent of the disease nationally and internationally, implications of major epidemiologic studies, and strategies for prevention. (PR: PHC 6000 or CI)

PHC 6050 BIostatISTICS I (3) Concepts, principles, and methods of statistics applied to public health issues. (PR: CI)

PHC 6051 BIostatISTICS II (3) Intermediate level statistical methods appropriate for health and epidemiologic studies. Emphasis on 2x2 tables, analysis of variance, multiple linear regression, methods of survival analysis, logistic regression, and Cox regression. (PR: PHC 6000 and PHC 6050)

PHC 6542 PUBLIC MENTAL HEALTH EPIDEMIOLOGY (3) A study of the factors that determine the frequency and distribution of mental disorders in human populations. Mental health intervention strategies also will be explored. (PR: PHC 6540, PHC 6000, or CI)

PHC 6700 RESEARCH METHODS IN EPIDEMIOLOGY (3) Planning, execution, analysis and intervention of epidemiologic studies. (PR: PHC 6000, PHC 6050 and CI)

PHC 7015 EPIDEMIOLOGIC STUDY DESIGN AND PROTOCOL DEVELOPMENT (3) The course will provide the student with the opportunity to acquire knowledge and skill in formulating a research problem and developing an appropriate epidemiologic study design. A detailed proposal will be developed, presented, and defended. (PR: PHC 6000, PHC 6700, PHC 6051 and CI)

PHC 7017 DESIGN AND CONDUCT OF CLINICAL TRIALS (3) The course will familiarize students with the issues in the design and conduct of clinical trials. Factors involved in organizing a trial, randomizing subjects, implementation, and analyzing data from the study will be considered. (PR: PHC 6050, PHC 6000 and CI)

PHC 7018 ENVIRONMENTAL EPIDEMIOLOGY (3) This course will consider the relationship between environmental (non-occupational) factors and the occurrence of disease in human populations, including the chemical and physical extrinsic agents to which humans are exposed. (PR: PHC 6000 and CI)

PHC 7019 OCCUPATIONAL EPIDEMIOLOGY (3) Examines the existing epidemiologic data pertaining to the health effects of specific occupational exposures and the epidemiologic methods involved in the conduct of occupational studies. (PR: PHC 6000 and CI)

PHC 7053 CATEGORICAL DATA ANALYSIS (3) Study of techniques used in analyzing data where subjects have been cross-classified by two or more categorical variables. Special emphasis given to problems frequently arising in epidemiology, public health and medicine. (PR: PHC 6051 or CI)

DEPARTMENT of HEALTH POLICY and MANAGEMENT

Chairperson: J. Studnicki; *Professors:* S.N. Banoob, T.N. Chirikos, R.P. Kaufman, P.J. Levin, J. Studnicki; *Associate Professors:* A.M. Sear, J.H. Skinner, J. Wolfson; *Assistant Professor:* G. Walker; *Other Faculty:* D. Rosenberg.

HSA 6196 INFORMATION SYSTEMS IN HEALTH CARE MANAGEMENT (3) The course is designed to prepare students to analyze and design information systems in health services organizations. (PR: PHC 6050 or CI)

HSA 6197 DESIGN OF COMPLEX HEALTH INFORMATION SYSTEMS (3) Introduction to concepts of management information systems applied to public health settings. Emphasis on practical application using computers. (PR: CI)

PHC 6101 HEALTH CARE ORGANIZATIONS (3) This course presents an overview of principles in the design and structure of health care organizations and their relationship to the regulatory environment at the federal, state, and local levels. (PR: PHC 6102 or CI)

PHC 6102 PRINCIPLES OF HEALTH POLICY AND MANAGEMENT (3) General principles of planning, management, evaluation, and behavior of public and private health care organizations at the local, state, and national levels. (PR: CI)

PHC 6110 INTERNATIONAL HEALTH AND HEALTH CARE SYSTEMS (3) Study of global health problems and trends, translated to needs and demands; socio-economic and political impact on health delivery; prevailing international systems compared to U.S. system; the role of international health agencies. (PR: CI)

PHC 6111 PRIMARY HEALTH CARE STRATEGIES (3) This course is designed to address the rationale, planning, and implementation of primary health care programs. Emphasis is given to establishing primary care as an integral part of the health care system and as an essential component of public health programs. (PR: PHC 6151, PHC 6180, PHC 6110, or CI)

PHC 6146 HEALTH SERVICES PLANNING AND EVALUATION (3) Study of health services planning concepts/methods, and evaluation, with an emphasis on facilities and manpower planning, providing an indepth orientation to information requirements for health planning, and methods to cover gaps of information. (PR: PHC 6050 or CI)

Public Health

- PHC 6150 HEALTH POLICY ANALYSIS (3)** A detailed study of policies, policy making, and policy analysis in health services and their relationship to health planning, management, and health care delivery. (PR: PHC 6102 or CI)
- PHC 6151 HEALTH POLICY AND POLITICS (3)** This course will examine the role of federal, state, and local government in health care organization, delivery, and financing in the United States and other comparable industrial nations. (PR: PHC 6102 or CI)
- PHC 6160 HEALTH CARE FINANCIAL MANAGEMENT (3)** An introduction to the application of financial management practices in health care organizations, cost behavior analysis, working capital management, financial statement analysis, and capital decision making. (PR: At least one undergraduate course in Financial or Managerial Accounting and PHC 6102, or CI)
- PHC 6161 HEALTH CARE FINANCE APPLICATIONS (3)** A case method approach to the financial management of health care organizations. Quantitative decision analysis techniques, costing methods, and financial policy analysis skills are emphasized. (PR: PHC 6102 or CI)
- PHC 6162 SEMINAR ON INDUSTRY AND HEALTH (3)** A study of the role that business organizations play in the financing, provision, and consumption of health care services, and an examination of health care reimbursement methods, health benefit plan design and cost containment methods. (PR: CI)
- PHC 6180 HEALTH SERVICES MANAGEMENT (3)** Advanced study of specific topics in health care organization management including the managerial process, organizational theory, resource utilization and control, and human resource management. (PR: PHC 6102 and undergraduate accounting course or CI)
- PHC 6181 ORGANIZATIONAL BEHAVIOR IN HEALTH CARE MANAGEMENT (3)** The course is designed to prepare the student for executive management responsibilities in a health service organization. A seminar format is used for an in-depth examination of human factors/human relations issues in health service organizations. (PR: PHC 6180 or CI)
- PHC 6190 MANAGEMENT OF PUBLIC HEALTH PROGRAMS (3)** Application of principles and methods for organization and management of government and non-government public health programs. (PR: PHC 6102 and CI)
- PHC 6191 QUANTITATIVE ANALYSIS IN HEALTH CARE MANAGEMENT (3)** This course examines the use of quantitative modeling in the management of health care organizations. Emphasis is given to the application of standard modeling techniques to operational problems in health and medical care settings (PR: PHC 6050 and PHC 6180, 6430, and 6151 or CI)
- PHC 6430 HEALTH ECONOMICS I (3)** Microeconomic analysis of the structure of the health care industry and economic incentives facing physicians, patients, and hospitals. (PR: ECO 2023 or equiv. and CI)
- PHC 6431 HEALTH ECONOMICS II (3)** Second of a two part sequence surveying various applications of economic principles and methods to current issues in public health. Emphasis on efficiency goals of health care policy and the use of economic analysis in the design of such policy. (PR: PHC 6430)
- PHC 6540 PUBLIC MENTAL HEALTH (3)** Current state of community mental health emphasizing history and future of the movement and involvement of public agencies; methods, goals, evaluation of treatment, funding and administration of programs. (PR: CI)
- PHC 6541 PUBLIC MENTAL HEALTH ADMINISTRATION (3)** General principles of management theory, methods, administrative processes, and organizational structure of public and private mental health organization in hospital and ambulatory care settings. (PR: PHC 6540, PHC 6102 or CI)
- PHC 6760 HEALTH PROGRAM EVALUATION (3)** The course develops the skills needed to evaluate health and medical care programs. Emphasis is given to research design, determination of qualitative and quantitative criteria, measurement techniques, and interpretation of findings (PR: PHC 6430, 6180, and 6151 or CI)

FLORIDA PUBLIC HEALTH INFORMATION CENTER

Director: J. Wolfson; Deputy Director: G. Walker; Research Associate: B. Clark

INDEX

A University Whose Time Has Come	1
Academic calendar	iv
Academic Dishonesty	40
Academic Services and Support	29
Academic Standards	24
Accountancy	91
Accounting/Law	223
Accreditation	2
Adds	21
Administration of State Universities	5
Admission to Candidacy	28
Admission to Graduate Study	13
Adult and Vocational Education	104, 233
Adult Education	233
American Studies	48, 172
Anatomy	148, 278
Anthropology	48, 173
Appeals	24
Application for Degree	25
Architecture Program	4, 169
Art	142, 273
Art Education	118, 249
Arts & Sciences, College of	3
Association of Library and Information Students	125
Astronomy	175
Auditing Privilege	22
Availability of Courses	21
Basic and Interdisciplinary Engineering	256
Biochemistry and Molecular Biology	148, 279
Biology	175
Biostatistics	161
Botany	176
Business Administration	223
Business Administration, College of	3
Business and Office Education	234
Campus Recreation	10
Cancellation Before First Class Day	22
Catalog	21
Center Economic Education	97
Center for Economic and Management Research	96
Center for International Business	96
Center for Microelectronics Research (CMR)	137
Center for Organizational Effectiveness	97
Center for Urban Transportation Research (CUTR)	138
Certification Students	122
Change of Graduate Degree Program	25
Chemical Engineering	131, 256
Chemistry	52, 176
Childhood Education Organization	124
Childhood/Language Arts/Reading Education	105, 236
Choice of Catalog	25
Civil Engineering and Mechanics	132, 258

Classics	54, 178
Clubs and Other Organizations	39
College of Arts and Sciences	172
College of Education	233
College of Education Student Council	124
College of Engineering	256
College of Fine Arts	273
College Of Medicine	278
College Of Nursing	283
College Of Public Health	287
Commencement	25
Communicating with the University	vii
Communication	54, 178
Communication Sciences and Disorders	56, 180
Community and Family Health	158, 288
Comprehensive Qualifying Examination	28
Computer Science and Engineering	133, 261
Computing Services	30
Counselor Education	111, 244
Course Attendance at First Class Meeting	21
Course Descriptions	169
Course Level Definition	169
Criminology	58, 183
Cultural Events	39, 146
Delta Epsilon Pi of America	125
Delta Pi Epsilon	125
Dissertation	28
Distributive and Marketing Education	234
Doctor of Education	102
Doctoral Committees	27
Doctoral Degree Programs	4
Doctoral Minor in Public Administration	78
Drops	22
Dual Master's Degree	27
Dual MPH/MSW	160
Economics	94, 225
Ed.S. and Ed.D. Degree	27
Education M.A.	99
Education, College of	3, 4
Education, M.Ed.	101
Educational Leadership	108, 238
Educational Measurement and Research	110, 241
Educational Resources	29
Educational Specialist	102
Electrical Engineering	134, 264
Elementary Education	236
Engineering, College of	3
English	58, 184
English Education	119, 249
Enrollment Requirements for Graduate Students	24
Environmental and Occupational Health	163, 290
Environmental Engineering	132
Environmental Health	163
Epidemiology	161
Epidemiology and Biostatistics	292
Equal Opportunity Complaint Procedure	8
Exclusions	25

Executive M.B.A.	92
Fees	33
Fields of Graduate Study	3
Final Comprehensive Examination	26
Final Oral Examination	28
Finance	90, 226
Financial Aid	17
Financial Information	33
Fine Arts Student Organizations	146
Fine Arts, College of	4
Florida Engineering and Industrial Experiment Station (EIES)	138
Florida Engineering Education Delivery System (FEEDS)	137
Florida Mental Health Institute (FMHI)	31
Florida Public Health Information Center	295
Florida Residency for Tuition Purposes	33
Food Service	38
Foreign Language Education	119, 250
Fort Myers Campus	7
FPHA Scholarships	158
French	186
Gelin, Carl A., Endowed Fellowship	157
General Academic Regulations and Information	21
General Business Administration	231
General Public Health Courses	287
General, Education	248
Geography	60, 191
Geology	61, 191
German	187
Gerontology	61, 193
Grade Point Average	23
Grades and Scholarship Requirements	22
Graduate Business Association (GBA)	97
Graduate Degree Programs	25
Graduate Faculty	23
Graduate Grading System	22
Graduate Program Coordinators	5
Greek	178
Grievance Procedure	8
Guidance and Counseling Programs	111
Health Administration	167
Health Care Organizations and Management	166
Health Policies and Programs	166
Health Policy and Management	165, 293
Health Service	37
Higher Education	241
History	63, 195
Honor Societies	9
Housing	38
Humanities	63, 195
I Grade Policy	23
Immunization Requirement	16
Industrial and Management Systems Engineering	268, 134
Industrial and Technical Education	234
Industrial Hygiene and Safety Management	164
Information Systems and Decision Sciences	227
Institute for Information Systems Management	97
Institute of Banking and Finance	97

Institute on Black Life	11
Instructional Technology	119, 250
Intercollegiate Athletics	10
Interdisciplinary Social Sciences	196
Intermediate Program	4
International Applicants	14
International Business	90
International Health Management	166
International Student Services	37
Italian	188
Junior College Teaching Program	109
Kappa Delta Pi	125
Lakeland Campus	7
Lakeland Campus Bookstore	39
Latin	178
Library and Information Science	64, 196
Linguistics	188
M Grade	23
M.B.A. Program for Physicians	93
Major Professor/Advisor	23
Management	94, 229
Management Information Systems	91
Management Institute, The	96
Mandatory Enrollment for Doctoral Students	28
Marine Science	65, 199
Marketing	91, 231
Mass Communications	67, 201
Master of Architecture Program	45
Master of Business Administration (M.B.A.)	88
Master of Liberal Arts	64
Master of Science in Public Health	160
Master's Committee	26
Master's Degree	25
Master's Degree Programs	3
Maternal and Child Health	158, 288
Maternal-Child Health Traineeships	157
Mathematics	67, 203
Mathematics Education	120, 250
Mathematics Education Club	124
Mechanical Engineering	135, 271
Medical Bookstore	39
Medical Microbiology and Immunology	148, 280
Microbiology	206
Minority Organization of Students in Education	125
Modern Languages and Linguistics	69, 186
MSPH in Biostatistics	162
Music	144, 274
Music Education	111, 242, 277
NASA STAC (Southern Technology Application Center)	138
NIOSH Traineeships	157
Non-Degree Seeking Students	15
Nursing	283
Nursing, College of	4
Occupational Health for Health Professionals	165
Off-campus Housing	38
Office of Research	29
Office of Scholarly Publications	18

Organization and Personnel	5
Pathology and Laboratory Medicine	148, 281
Ph.D. Degree	27
Ph.D. in Public Health	156
Pharmacology and Therapeutics	148, 282
Phi Beta Lambda	125
Philosophy	71, 206
Philosophy of Nursing	151
Physical Education	111, 243
Physics	72, 208
Physiology and Biophysics	149, 283
Political Science	73, 210
Procedure for Applying	14
Professional Development Center	97
Program and Course Requiements	25
Programs Offered	1
Psychological and Social Foundations	244
Psychological and Social Foundations of Education	111
Psychological Foundations	245
Psychology	75, 212
Public Administration	75, 214
Public and Community Health Education	289
Public Health Education	158
Public Health Nutrition	159, 289
Public Health, College of	4
Reading Education	237
Refund of Fees	35
Registration	16
Rehabilitation Counseling	79, 216
Religious Organizations	9
Religious Studies	80, 218
Residence Halls	38
Residency	27
S/U Grade System	23
Sarasota Campus	7
School Psychology	114, 247
Science Education	120, 251
Secondary Education	117, 249
Semester System	21
Service and Resource	9
Small Business Development Center	96
Social Foundations	246
Social Science Education	120, 252
Social Work	80, 219
Societies, Professional, Academic and Departmental	9
Sociology	82, 221
Solid and Hazardous Waste Management	133, 163
Spanish	190
Special Education	121, 253
Special Services	36
Special Summer Programs Overseas	70
St. Petersburg Campus	7
St. Petersburg Campus Bookstore	39
State Board of Education	5
Student Affairs	37
Student Council for Exceptional Children	124
Student Counselor Education Organization	124

Student Government	39
Student Music Educators National Conference	124
Student National Education Association	124
Student Publications	10
Student Rights and Responsibilities	40
Test of English as a Foreign Language (TOEFL)	15
Theatre	278
Theatre Education	120, 252
Thesis	26
Time Limitations	26, 27
Tools of Research	27
Toxicology	163
Transcript Information	22
Transfer Credit	24
Traveling Scholar Program	16
Tropical Public Health/Communicable Disease	164
U.S. Public Health Traineeships	157
University Bookstore	38
University Center	8
University Graduate Policies and Procedures	23
University Library	29
University Police	10
University Regulations	24
USF Music Faculty	145
USF: A Modern Metropolitan Environment	7
Vehicle Regulations and Fees	35
Veterans Administration Benefits	36
Veterans Affairs	11
Visiting Artists and Artists-In-Residence	146
Withdrawal	22
Women's Studies	222
Z Grade	23
Zoology	222

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