



UNIVERSITY OF
SOUTH FLORIDA

A PREEMINENT
RESEARCH UNIVERSITY

Spring 2024 GRADUATE STUDENT ORIENTATION

Department of Civil & Environmental
Engineering

DR. SARINA ERGAS

Professor & Graduate Program Director (GPD)

Today's Agenda

- Welcome and introductions
- Presentation by Graduate Assistants United (GAU)
- Presentation by Veronica Jo (Mental Health & Stress Resources)
- Basic Information
- Requirements/information for Master's degrees
- Requirements/information for PhD
- Rules, requirements, and advice
- Q&A



CEE Departmental Contacts - Graduate

Please allow at least 24 hours for a response to email

- **Graduate Program Director:** Dr. Sarina Ergas, PhD, PE

- Email: sergas@usf.edu
- Office ENC 3210
- Spring 2024 Office hours:
Wed (5pm – 6pm)
Thurs (10am – 11:30am)

- **Academic Program Specialist:** Jennifer Valko

- Email: jvalko@usf.edu
- Office ENC 3305
- Hours: Mon-Fri 8am-5pm*
*subject to change to part-time remote



GUEST PRESENTATIONS:

- *Graduate Assistants United (GAU) (10 min)*
- *Mental Health & Stress Relief Resources (10 min)*

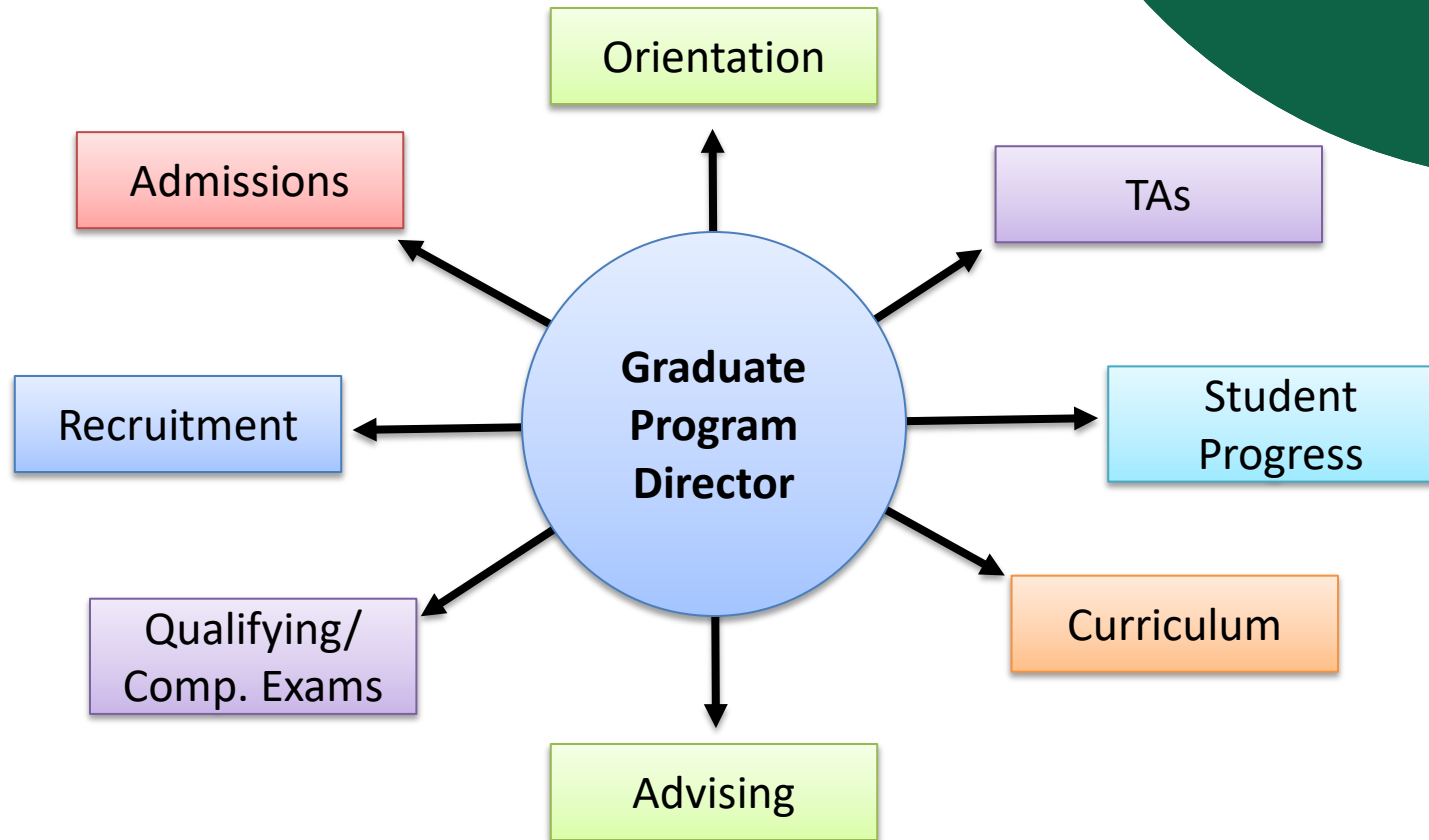


CEE Department Contacts

- **Department Chair**
 - Dr. Manjriker Gunaratne, 813-974-5822, gunaratn@usf.edu
- **Academic Services Administrator**
 - Ms. Marina Pospelova, 813-974-5596, mpospelova@usf.edu
- **Undergraduate Academic Program Specialist**
 - Ms. Adea Arrison, 813-974-7082, aarrison@usf.edu
- CEE Department **Office location:**
*USF Tampa Campus, **ENC 3300** (Engineering Building III)*



What does the graduate program director do?



Graduate Program Committee

WATER RESOURCES

- Dr. Mauricio Arias (mearias@usf.edu)
- Dr. Mahmood Nachabe (nachabe@usf.edu)
- Dr. Mark Ross (maross@usf.edu)

ENVIRONMENTAL

- Dr. James Mihelcic (jm41@usf.edu)

MATERIALS

- Dr. Abba Zayed (zayed@usf.edu)

STRUCTURES & GEOTECHNICAL

- Dr. Zachary Haber (zacharyhaber@usf.edu)
- Dr. Gray Mullins (gmullins@usf.edu)
- Dr. Daniel Simkins (dsimkins@usf.edu)

TRANSPORTATION

- Dr. Yu Zhang (yuzhang@usf.edu)
- Dr. Hao Zhou (haozhou1@usf.edu)





Basic Information

Getting Started at USF

- **Friday, January 5th at 5:00 pm:** Last day to register a class for Spring 2024 without incurring the \$100 late registration fee. Must sign up for **ONE** class by this Friday.
 - Add/drop classes until January 12th without penalty
- **Lab Safety training:** <https://www.usf.edu/administrative-services/environmental-health-safety/>
- **New TA training:** <https://www.usf.edu/citl/programs/gradstudents/ta-orientation.aspx>
-MANDATORY completion before first day of classes of semester you are TAing
- **Responsible conduct of research training:**
<https://www.usf.edu/graduate-studies/research/responsible-conduct-of-research.aspx>
- Office space, keys, and late access to buildings – see your advisor
- Ordering supplies – see your advisor
- Computer / IT questions – help@usf.edu



CEE Graduate Students Canvas Course

You have been added to the Canvas Course [CEE Grad Students](#) and added to a section based on your concentration:

- *Used for sending out info about seminars, student association **events**, new courses, fellowships, jobs, conferences, etc.*
- *Used for notifications about upcoming **deadlines***
- *Instructions for **submitting forms** that need to be processed by staff:*
 - Registration form (*Grad Contract*) - Independent Study, Directed Research, Thesis, Dissertation hours
 - Course Transfer Forms
 - Change of Major / Change of Concentration
 - Committee Forms, Application for Candidacy, Successful Defense
 - Program of Study, Graduation Checklist
 - Tuition Waivers

Have these codes memorized and used on all CEE forms:

College: **EN** (Engineering)

Degree: **MSCE** (Civil), **MSEV** (Environmental), or **PhD**

Major: **ECE** (Civil) or **EVE** (Environmental)

Department: **CEE**

Concentration (if applicable):

EFD (International Development)

GTL (Geotechnical)

MTL (Materials)

STR (Structures)

TPT (Transportation)

WRS (Water Resources)

USF Student Organizations



Signup via BullsConnect and get involved in the student organizations!



<https://bullsconnect.usf.edu/>

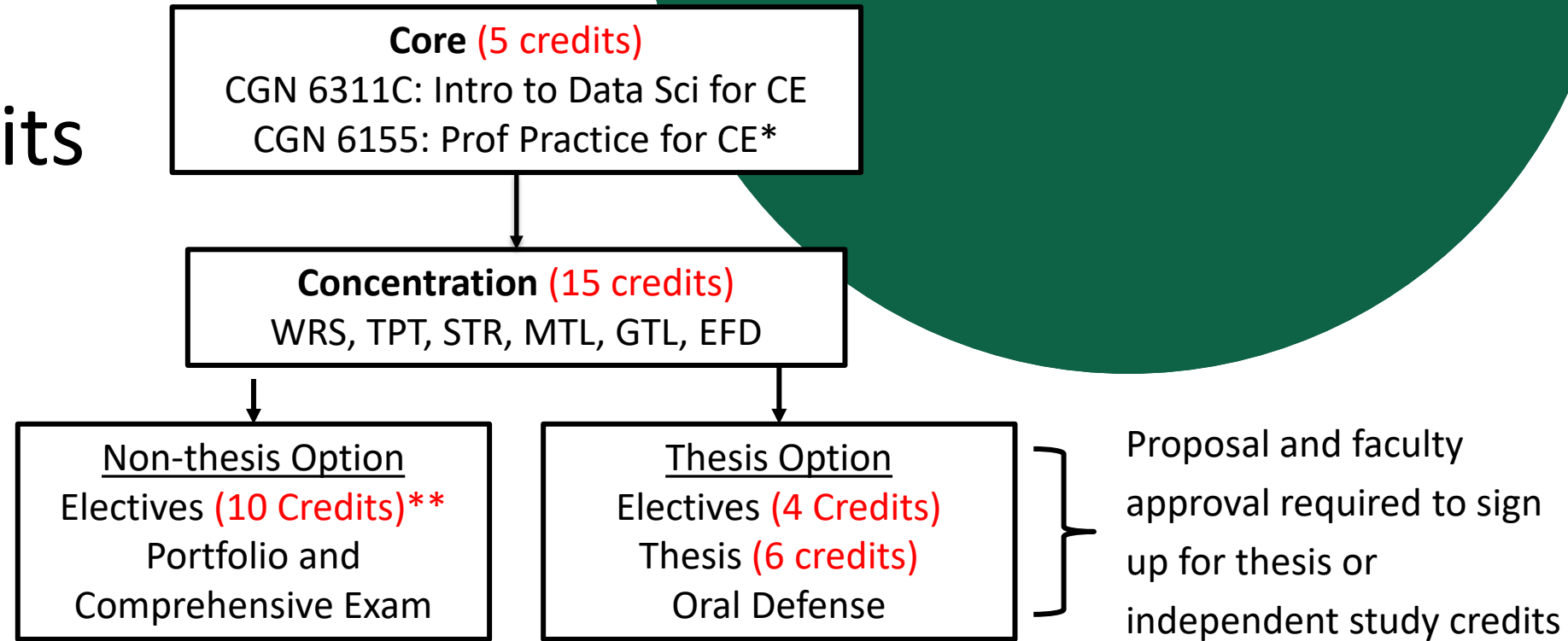
- *American Society of Civil Engineers (ASCE)*
- *Institute for Transportation Engineers (ITE)*
- *American Water Works Association (AWWA)*
- *Florida Water Environment Association (FWEA)*
- *Engineers Without Borders (EWB)*
- *American Water Resources Association (AWRA)*
- *Recommend that you take 1 credit seminar in your concentration area (or attend without taking for credit)*





Requirements & Information for Master's Degrees

MSCE 30 Credits



*Will be offered only in Spring semester

≥ 16 credits at 6000 level or above, remainder at 5000 level or above

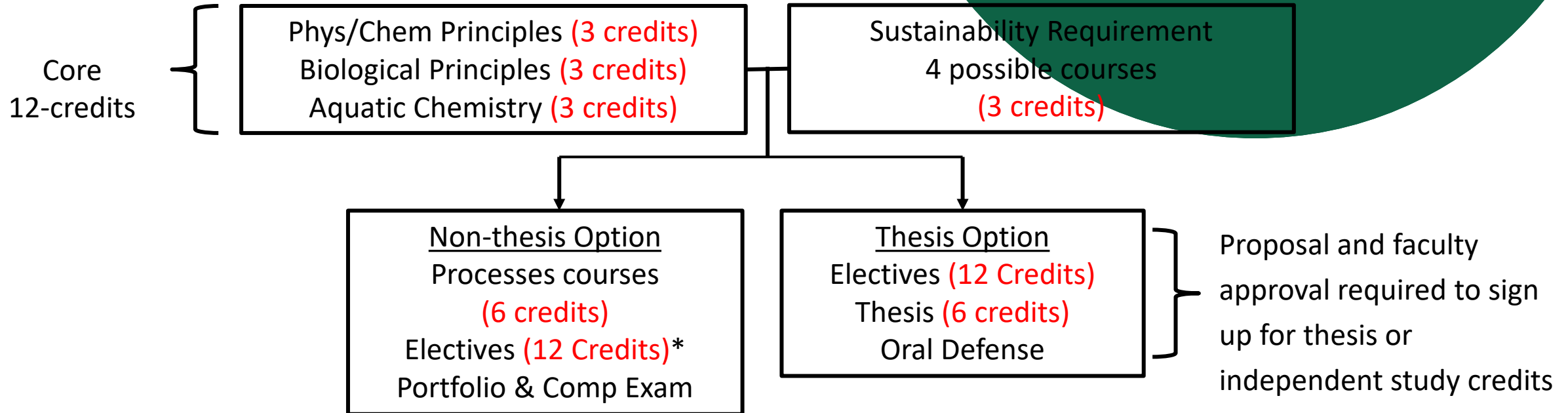
Max 12 credits outside the CEE department (e.g. Engineering Management, Public Health)

**Max 6 credits of independent study counted towards coursework requirements

Concentration requirements – see programs of study.



MSEV 30 credits



≥ 16 credits at 6000 level or above, remainder at 5000 level or above

Max 12 credits outside the CEE department (e.g. Engineering Management, Public Health)

*Max 6 credits of independent study counted towards coursework requirements



Thesis-based or Coursework-only?

- One is not “better” -- depends on interests and goals
- Non-thesis Master's
 - *Coursework only*
 - *Flexible* - can accelerate pace (1 year) or take 1 to 2 classes per semester
 - *Opportunities for independent study (similar to thesis but not as extensive)*
- Thesis-based Master's degrees
 - *Allows you to work closely with a faculty member on research*
 - *Usually takes longer (1.5 to 2 years) and requires full-time study*
 - *Potential for financial aid during your Master's study (RA or TA)*
 - *Prepares you if you are interested in a PhD or research-based career*

What is a Master's Thesis?

- Contribution to the field of study through **research** and **publication**
- Research guided by a **major professor** or co-major professors
- Three-member committee – major professor must be from CEE
 - File committee paperwork at least one semester before graduation.
- Thesis may be derived from work done as a research assistant
- **Written thesis** and **oral defense** required
- You need to submit a proposal and registration form to sign up for thesis credits
- Be sure to sign up for 2 credits of thesis during final semester.

On Finding a Thesis Advisor (major professor or co-major professors)

- **Close collaboration between faculty advisor and student so choose wisely:**
 - *Read their profiles on the department website*
 - *Read their publications*
 - *Talk to them about your common research interests*
 - *Talk to them about funding opportunities in their research groups*
 - *Talk to their students*
 - *Look for a good fit between their mentoring style and the way you work best.*

Non-Thesis Master's Comprehensive Exams

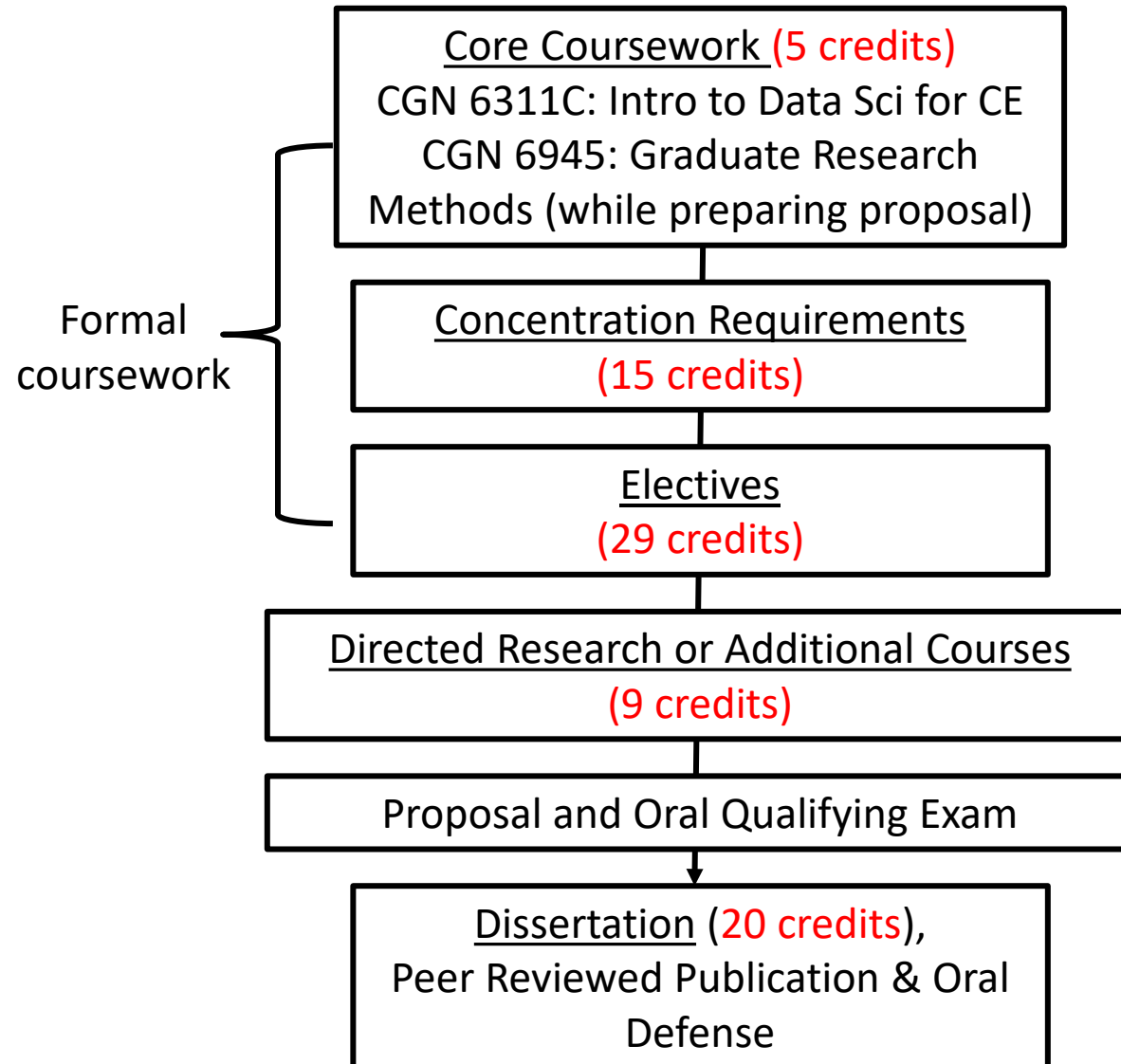
- The semester of graduation:
 - **Writing sample** – *independently authored research paper on a technical topic to evaluate your written communication skills.*
 - **Complex problem** – *report to evaluate your ability to formulate and solve complex problems.*
 - **Oral presentation and exam** – *to evaluate your oral communication skills and understanding of the background, methods, and findings related to the complex problem.*
- Information sessions offered every semester that can help you prepare.





Requirements & Information for Doctoral (PhD) Degrees

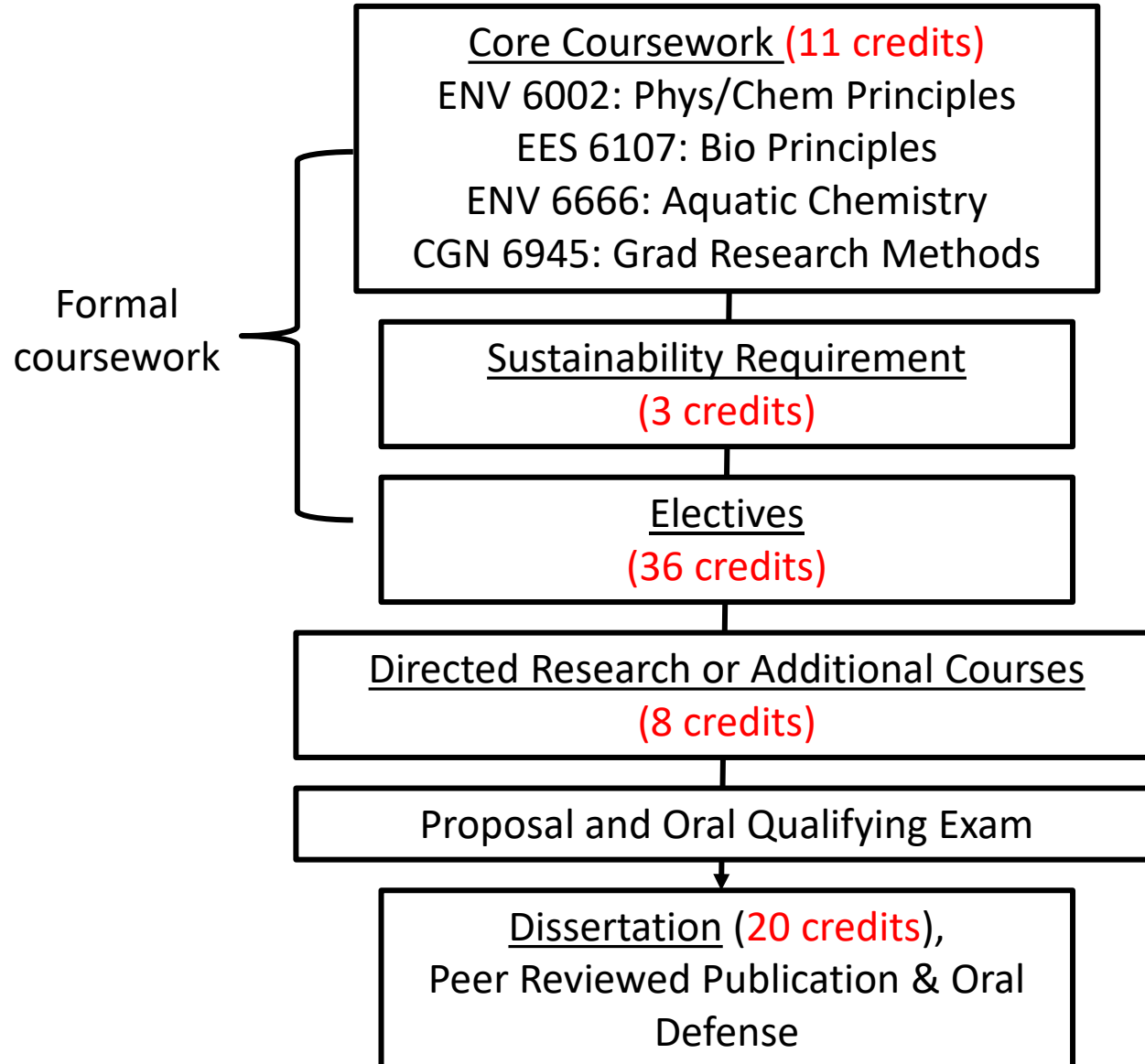
PhD Civil Engineering 78 Credits (48 with MS degree)



- Up to 30 credits from MS degree (including up to 6 credits of thesis) may be used to meet formal coursework requirements.
- No credits of directed research or graduate instruction methods may be used toward the formal coursework requirements
- Max 9 credits of independent study counted towards formal coursework requirements.
- Dissertation credits can only be taken after admission to candidacy.



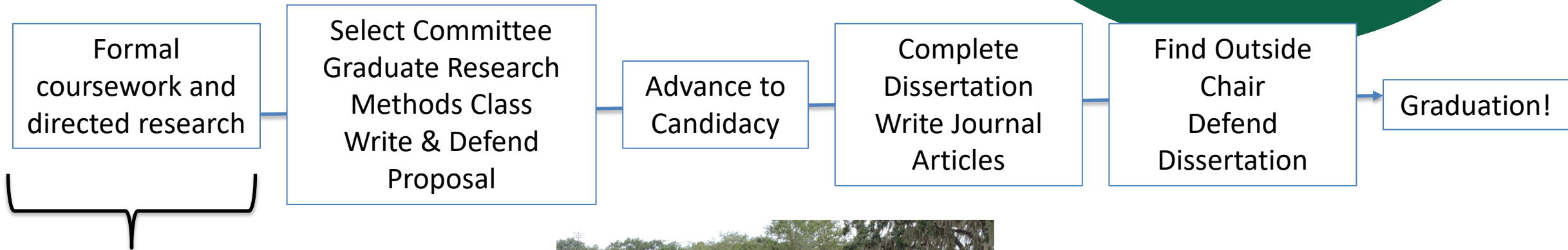
PhD Environmental Engineering 78 Credits (48 with MS degree)



- Up to 30 credits from MS degree (including up to 6 credits of thesis) may be used to meet formal coursework requirements.
- No credits of directed research or graduate instruction methods may be used toward the formal coursework requirements
- Max 9 credits of independent study counted towards formal coursework requirements.
- Dissertation credits can only be taken after admission to candidacy.



PhD Timeline



Includes courses and thesis credits taken for “Master’s Along the Way” for students entering the program without an MS degree.



P.h.D. Dissertation

Fundamental contribution to knowledge, sufficient in scope and quality, through research and publication

- **Written Proposal + Oral Candidacy Exam** (Qualifying Exam) normally taken within 3-4 semesters of entering program
- **Written dissertation and successful defense of dissertation** (final oral examination)
- **Publication requirement:** a minimum of one article accepted to peer-reviewed journal (with letter of acceptance provided)



Doctoral Dissertation Committee – 5 members

- One major professor or two equal co-major professors
- Minimum 3 members from student's academic area
- Minimum 1 member from Engineering outside CEE
- Minimum 1 member from outside College of Engineering
- CV and written justification required for any committee member who is not a member of the USF graduate faculty
- **File your committee paperwork the semester before you want to take your qualifying exam and advance to candidacy**
- Your dissertation defense must be chaired by an “outside chairperson” i.e. a faculty member from outside CEE.





Rules, Requirements & Advice

Concentration Requirements

You must know:

- Your program (Civil Engineering, Environmental Engineering)
- What degree you are seeking (MSCE, MSEV or PhD)
- Thesis or coursework-based Master's degree?
- Your concentration area, if any (i.e. STR, GTL, TPT, WRS, MTL, EFD)

You can then look up your program requirements in these places:

- **USF Graduate Catalog** <https://catalog.usf.edu/index.php>
- **Program of Study** forms available from the departmental web site (<https://www.usf.edu/engineering/cee/graduate/grad-forms.aspx>)



Independent Study

- **Grad students may sit in on undergrad class and receive graduate credits with additional requirements.**
- **Study a topic not offered or offered infrequently.**
- **Work on a project with a professor and produce a report based on a lit review, design, modeling, experiments, etc.**
- **Good option for non-thesis MS students who wish to work one-on-one with a faculty member on a project.**
- **Submit 1-page description of the proposed project including: objective, scope of work, meeting times, deliverables, assignments and/or exams required and grading criteria.**

Transferring Courses

- Transfer up to **12 credits** of coursework taken:
 - During undergraduate degree if not used to meet BS requirements.
 - Taken as a non-degree-seeking
 - Taken in another USF program if not used to meet degree requirements
 - Taken as a graduate student at another university if not used to meet degree requirements
 - **Submit transfer form via Canvas (email and check with Jennifer if the form was processed by the College)**
- Note that no transfer of courses is needed for PhD students to get 30 credits from an approved MS degree.



Staying in the Graduate Program

- Take a minimum of 6 hours of graduate credit every 3 continuous semesters.
- File leave of absence form if you are not taking classes (EFD students have zero credit course option for time abroad)
- Remain in good standing ($\text{GPA} \geq 3.0$) throughout program
- Only grades > 2.0 ("C") can be used for meeting graduation requirements (no C- grades counted)
- GPA below 3.0 → Probation 1 (warning) → Probation 2 (meet with GPC to discuss) → Probation 3 (last chance!) → Academic Dismissal

CEE Policy on Academic Integrity

The Civil & Environmental Engineering department is committed to the honesty and integrity of our community. This commitment is also reflected in the American Society of Civil Engineers ([ASCE Code of Ethics](#)). Students who violate Office of Graduate Studies policy on [Academic Integrity](#) are subject to one of following consequences based on the policy of the instructor: 1) a grade of zero for the assignment, 2) lowering of the course grade by a letter grade, 3) a grade of F in the class or 4) dismissal from the university. In addition, the student will be reported to the department. A second violation will result in an automatic dismissal from the university.



Plagiarism

*“Plagiarism is the appropriation of another person’s **ideas, processes, results, or words** without giving appropriate credit”*
(Anderson & Steneck, 2011, p. 90; credited Office of the President, Office of Science and Technology Policy.
Federal Register, 2000).

American Chemical Society Ethics in Publishing: *“verbatim or near-verbatim **copying, or very close paraphrasing**, of text or results from another’s work.”*

Most CEE faculty utilize Turnitin.com to compare student assignments with billions of web sites and student papers.
When in doubt, you can make an appointment with the **Writing Studio** (at the USF Library) or check with your instructor.

- *If you’re an international student with English NOT being your native language and you need extra assistance with your papers/essays, feel free to make an appointment with the **USF Multilingual Writing Center**:*

<https://www.usf.edu/arts-sciences/departments/world-languages/graduate/multilingualwritingcenter.aspx>



Time Limits

DOCTORAL PROGRAMS

- All courses applied to the degree must be completed within 7 years.

MASTER'S PROGRAMS

- Degrees must be completed within 5 years from date of admission.
- All courses applied to the degree must be completed within 7 years.

Financing Your Graduate Education

- **Graduate scholarships/fellowships** available from many agencies around the country (check department, college and graduate studies websites for more information)
- **TAs assigned by Dept. Chair** – new PhD students priority.
- **RAs** at discretion of individual faculty members.
 - *Full-time students may be employed half (20 hrs/wk) or quarter-time (10 hrs/wk) to assist faculty with research*
 - Assistantships (TAs/RAs/GAs) carry a monthly stipend and often come with a tuition waiver and health insurance
 - **Travel grants** are available to attend conferences and professional meetings

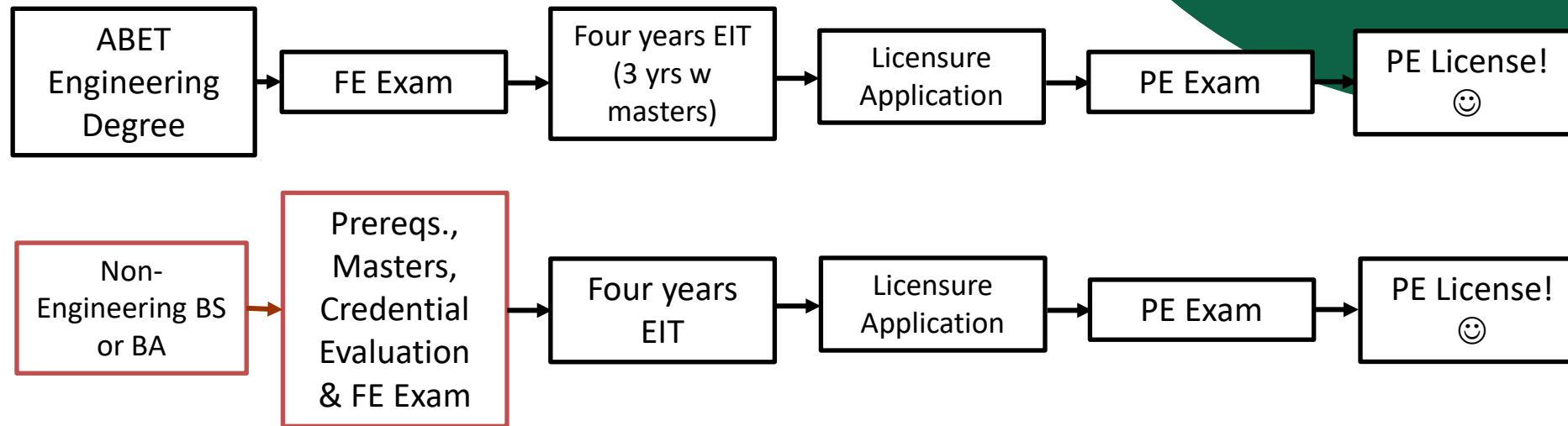
Option for Non-Engineers:

Welcome to the greatest profession in the world!

- 32 credits math & science, 48 credits engineering
 - 2 semesters calculus, differential equations, physics, chemistry, statistics, additional math and science courses
 - 12 credits engineering core: statics, thermo, fluids, economics
 - 36 cr additional engineering courses in concentration area (includes course taken for masters)
 - See <https://www.usf.edu/engineering/cee/graduate/grad-forms.aspx> for more information
- Many students complete some pre-reqs before admission and remaining courses concurrent with MS requirements



Different Paths to Licensure



For more information: <https://fbpe.org/>

Some CoE and CEE forms

<https://www.usf.edu/engineering/cee/graduate/grad-forms.aspx>

- **Program of Study** forms – will help you plan your program of study. Need to submit the semester BEFORE graduation
- **Registration** for independent study, thesis, directed research or dissertation hours (independent study or thesis requires proposal)
- **Committee Forms**
- **Graduation Checklist** – normally due first week of classes during the semester you plan to graduate. Available on Canvas page



Office of Graduate Studies Forms

(<https://www.usf.edu/graduate-studies/forms.aspx>)

- Change of Major (e.g., EVE to CE)
 - ***NOTE: Students in the CE PhD program with a concentration in EVE should submit a change of major form ASAP!***
- Change of Concentration (e.g., WR to GTL)
- Admission to Doctoral Candidacy
- ***(Course forms):*** Graduate Petition, Course Currency, Delete or Transfer courses
- Dual Degree
- Student Status: Leave of Absence, Time Limit Extension, Voluntary Withdrawal
- Accelerated Program Application



On Being a Graduate Student

Qualities that will make you successful:

- Hard work!
- Thirst for knowledge
- Self-motivation, self-initiative
- Performing above and beyond assigned duties
- Being a team-player and contributor

Structures, Materials, Geotechnical Faculty and Research Interests

Chris Alexander clalexa2@usf.edu	Materials engineering; Corrosion diagnosis and control, Electrochemical impedance spectroscopy, Multi-physics modeling
Manjriker Gunaratne gunaratn@usf.edu	Pavement management systems; Pavement design; Probabilistic and numerical methods in pavement and geotechnical engineering
Zach Haber zacharyhaber@usf.edu	Ultra-high performance concrete; Reinforced & Pre-stressed Concrete Structures; Bridge Engineering, Strengthening & Preservation of Structures; Sustainable & Advanced Materials
Gray Mullins gmullins@usf.edu	Large-scale testing; Field instrumentation; Subsurface sensing and characterization; Full-scale testing of bridges and foundations; StatNamic testing; Alternative load testing techniques
Daniel Simkins dsimkins@usf.edu	Computational mechanics; Numerical analysis; Composite materials; Computational engineering
Abla Zayed zayed@usf.edu	Materials engineering; Mechanical performance of concrete, metals, and composites

Transportation Faculty and Research Interests

Qing Lu qlu@usf.edu	Pavement design – analysis and preservation; Asphalt and asphalt mixes; Transportation infrastructure system management; Surface technologies for orthotropic steel deck bridges
Fred Mannering flm@usf.edu	Application of econometric and statistical methods to a variety of engineering problems, highway safety, transportation economics, automobile demand, and travel behavior
Michael Maness manessm@usf.edu	Travel Behavior, Travel Demand Forecasting, Choice Modeling, Modeling Social Interactions, Emerging Transportation Technologies, Sustainable Transportation, Travel Survey Methods
Yu Zhang yuzhang@usf.edu	Air transportation; Transportation network modeling and operations; Transportation economics and planning; Freight transportation and transportation sustainability
Hao Zhou haozhou1@usf.edu	Application of deep reinforcement learning and self-driving to congestion management; Traffic modeling and control; Network Science

Environmental Faculty and Research Interests

Katherine Alfredo kalfredo@usf.edu	Drinking water quality and treatment. Sustainable potable water provisions. US and international water quality regulation. Community support of drinking water technology and utilities.
Jeff Cunningham cunning@usf.edu	Contaminant fate and transport; Physical, chemical and biological processes for water treatment; Water resources and re-use; Remediation of contaminated soil and groundwater
Sarina Ergas sergas@usf.edu	Biological wastewater treatment; Biological waste-to-energy technologies; Biological nutrient removal
James Mihelcic jm41@usf.edu	Sustainable development; Green engineering; Global water and sanitation; Engineering education reform
Amy Stuart als@usf.edu	Transport and transformation of pollutants in the atmosphere; Computational modeling; Human exposures to air pollutants
Maya Trotz matrotz@usf.edu	Application of chemical principles to understand pollutant behavior (e.g. arsenic) in natural and engineered systems
Daniel Yeh dhyeh@usf.edu	Membrane and biological processes for water and wastewater; Industrial waste minimization; Soil and sediment remediation
Qiong (Jane) Zhang qiongzhong@usf.edu	Water-energy nexus; Process and system modeling; Green engineering; Sustainability assessment and education; Life-cycle analysis



Water Resources Faculty and Research Interests

Mauricio Arias mearias@usf.edu	Science-based linkages between the hydrological cycle, ecosystems, and society, sustainable management of water resources, physical, biological and chemical properties of freshwater ecosystems
Mahmood Nachabe nachabe@usf.edu	Subsurface hydrology; Fate and transport of chemicals in the vadose zone; Stochastic hydrology; Uncertainty in distributed models.
Mark Ross maross@usf.edu	Hydrologic, hydraulic, and water quality modeling; Surface and groundwater interaction, GIS applications in hydrology; Lake and estuary water quality management; Estuary sediment dynamics
Andres Tejada-Martinez aetejada@usf.edu	Finite element methods for fluids; Subgrid-scale parameterizations for large-eddy simulation (LES) of turbulent flows; Novel LES methodologies; Numerical simulations of ocean turbulence

Welcome to the *University of South Florida*
Department of Civil & Environmental Engineering!

Thank you for joining us! 😊



Q & A





Why Graduate School in CEE at USF?



Why Graduate School?

- Improve your **marketability** and long-term **earning potential**
- Credit toward **PE registration**:
Master's = 1 year credit
PhD = 2 years credit
- MS is recommended by the **American Society of Civil Engineers (ASCE)** and the **National Academy of Engineering (NAE)**
- PhD required for most careers in research and academia
- *Love of learning*

Why CEE at USF?

- Strong commitment to the education of future scholars, researchers, and leaders in the CEE profession
- An exciting place to study and to live
- Many challenging local infrastructure and environmental problems
- Strong commitment to finding solutions to **global problems**
- **Flexibility** in degree offerings, areas of study, and schedule
- Our faculty, staff, and administration **care** about you and your success
- USF CEE graduate alumni are **well-placed in academia, municipal and government agencies, industry & consulting firms**

Degrees Offered

ENVIRONMENTAL ENGINEERING:

- **MSEV - Master's degree**
 - **Thesis option** – research-based degree
 - **Non-thesis option** – coursework only degree
- **PhD in Environmental Engineering**
- Concentration offered in **Engineering for International Development**

CIVIL ENGINEERING:

- **MSCE Master's degree**
 - **Thesis option** – research-based degree
 - **Non-thesis option** – coursework only degree
- **PhD in Civil Engineering**
- Concentrations in **Transportation, Geotechnical, Structures, Water Resources, Materials, Engineering for International Development**

Engineering For International Development (EFD)

- Follow guidelines for MSEV, MSCE or PhD degree depending on your interests
- Three core subject courses:
 - Applied anthropology
 - Global public health
 - Sustainable Development Engineering (ENV 6510)
- Extended international engineering field experience, which in most cases will form the basis of the Master's thesis or PhD dissertation.
- For more information contact Dr. James Mihelcic (jm41@usf.edu)