

Doctor of Philosophy (Ph.D.)
Department of Chemical & Biomedical Engineering

Program Description

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.

Program Requirements

1. Supervisory Committee. The chair of the appropriate department or program will appoint an advisor (**Major Professor**) for doctoral students at the University of South Florida in consultation with the student and faculty of the department. The advisor will help determine the student's area of research interest and will delineate preliminary course assignments. At the earliest possible date a Supervisory committee will be 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.

For PhD in Chemical Engineering*, the Major Professor or co-Major Professor should be a tenured or tenure-track member of the faculty of Chemical & Biomedical Engineering. Three members of the committee must be tenured or tenure track faculty members in Chemical Engineering. 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.)

**See graduate advisor on specific guidelines for the PhD in Biomedical Engineering*

A majority of the committee will be from the College of Engineering, with at least two departments of the College represented.

2. Credit Hours. 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. See course worksheets for details. **Transfer of credits:** If you have a Masters' Degree from another university or program, a maximum of 30 semester hours may be transferred to count towards the doctoral program. See Office of the Registrar for a Transfer of Credit Form and the catalog for policies on course transfer.

3. Learning Focus. Throughout the student's program of study, independent learning is 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. Diagnostic Examination. A diagnostic examination is required of all prospective doctoral students in Chemical Engineering. This requirement will be satisfied by maintaining a grade of B or better in graduate level courses taken in Chemical Engineering during the first year of study.

A student who does not satisfy this diagnostic requirement will be required to achieve an overall GPA of 3.0 or better in graduate level courses taken in Chemical Engineering (ECH5XXX and ECH 6XXX) prior to admission to candidacy . This is in addition to the University requirements of an overall GPA of 3.0 or better.

Additional diagnostic examination requirements may be expected to be imposed by the students' Major Professor in consultation with the thesis/dissertation committee if the committee has been appointed. The format of the additional diagnostic requirements is left to the discretion of the Major Professor and may be used to plan future course requirements for the student.

5. Qualifying Examination. Each Ph.D. student will take a written and oral qualifying examination, conducted by the Supervisory committee, as soon as a substantial majority of coursework is completed. Completion of this examination leads to admission of the student to candidacy. The Qualifying Examination should be taken within 2 years of admission to the Doctoral degree program. The student should prepare a 15 page, single spaced document outlining the proposed research following the guidelines required of proposals submitted to NSF. Consult your major professor and committee on the document format.

6. Admission to Candidacy. 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) been accepted by a department faculty member credentialed to serve as chair of the dissertation committee (major professor). Once admitted to candidacy students must enroll for a minimum of 2 credit hours each semester of the academic year until Completion of program.

7. Dissertation Research. 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. The defense of the dissertation will conform to Graduate Studies general rules.

8. Residency. See the graduate catalog for the residency requirement for a PhD degree. Also consult the college of engineering section in the catalog.

9. Time Limitations. After admission to the Ph.D. program student has 4 years to achieve candidacy and after admission to the candidacy, the student has 4 years to obtain a doctoral degree.

10. Other departmental requirements.

- A refereed publication. It must be in print or accepted for publication. Publication in a conference or proceedings (even if it is reviewed before acceptance) is not sufficient.
- You should present at least 2 departmental seminars based on the doctoral research. These are normally fulfilled by the qualifying exam and phd defense requirements.
- See course worksheets for additional guidance.