

CHEMICAL, ENVIRONMENTAL AND MATERIALS ENGINEERING

<https://cet.coe.miami.edu/>

Overview

The Department of Chemical, Environmental, and Materials Engineering (CET) offers a Doctor of Philosophy (Ph.D.) degree in Chemical, Environmental, and Materials Engineering with the following areas of emphasis:

- Chemical Engineering
- Environmental Engineering
- Materials Science and Engineering

The educational objectives of the Doctor of Philosophy program in Chemical, Environmental and Materials Engineering are to produce graduates whom:

1. Have advanced technical knowledge in at least one specialty area of chemical, environmental and materials engineering
2. Have advanced capability to apply advanced knowledge to engineering problems
3. Have made significant contributions in at least one specialty area of chemical, environmental, and materials engineering

The specialty areas of study for the Ph.D. include:

- Aerosols
- Water Systems
- Synthetic Biology
- Materials Synthesis

The College has embarked on six research thrust areas, and students can relate the above specialty areas to these and work on focused problems related to the six college wide research thrusts.

Students joining the PhD program in CET will need 60 credits beyond a BS degree to graduate. Thirty of these will be course work units, and 30 will be in research credit units or in seminar or teaching practicum units. For students who already have an earned Master of Science (in either civil, environmental, chemical, or materials engineering, or a closely related engineering field), the MS degree can count up to a maximum of 30 credits total, with approval of the Graduate Advisor and the student's PhD Committee. For students counting the maximum of 30 credits from an applicable MS degree, another 30 credits must be taken in residence at the University of Miami with a minimum of 15 of these 30 credits in course work units. All PhD students are required to engage in supervised research and defend a dissertation.

The following are the major requirements for the degree:

1. Take selected core classes in Year 1, and pass a Comprehensive Exam (first part of Qualifying Exam) at the end of Year 1
2. To demonstrate teaching participation, TA at least 2 classes, preferably in Year 2 or later.
3. Engage in research and defend a proposal by end of Year 2 (second part of Qualifying Exam), and be admitted to Candidacy.
4. Complete a PhD dissertation at end of program and defend the same to earn the degree. Students are encouraged to publish the results of their work in at least 1 refereed journal publication but preferentially 3.

The Program of Study is the student's specific set of coursework that defines the course requirements for graduation and must be approved by an advisory committee (known as the Supervisory Committee). Depending on whether the student already has an earned M.S. degree, the Ph.D. degree can typically be completed within two to five years.

Doctoral Program:

PhD in Chemical, Environmental, and Materials Engineering

CET 690. Special Topics. 1-3 Credit Hours.

Sub-titles describing the topics to be offered will be shown in parentheses in the printed class schedule, following the title Special Topics.

Components: LEC.

Grading: GRD.

Typically Offered: Offered by Announcement Only.

CET 695. Special Problems. 1-3 Credit Hours.

Project course introducing methods of research through an individual investigation of current problems. Offered by special arrangement only.

Components: RSC.

Grading: GRD.

Typically Offered: Offered by Announcement Only.

CET 790. Advanced Topics. 1-3 Credit Hours.

Subject matter offerings based upon student demand and availability of faculty. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule, following the title Advanced Topics.

Components: LEC.

Grading: GRD.

Typically Offered: Offered by Announcement Only.

CET 795. Special Problems. 1-3 Credit Hours.

Research and/or design projects. Individual investigation of current problems. Offered by special arrangement only.

Components: RSC.

Grading: GRD.

Typically Offered: Offered by Announcement Only.

CET 830. Pre-Candidacy Doctoral Dissertation. 1-12 Credit Hours.

Doctoral dissertation credits taken prior to the Ph.D. student's candidacy. The student will enroll for credit as determined by his/her advisor. Not more than 12 credit hours of CET 830 may be taken in a regular semester, nor more than 6 credit hours in a summer session.

Components: RSC.

Grading: SUS.

Typically Offered: Fall, Spring, & Summer.

CET 840. Post-Candidacy Doctoral Dissertation. 1-12 Credit Hours.

Doctoral dissertation credits taken after the Ph.D. student has been admitted to candidacy. The student will enroll for credit as determined by his/her advisor. Not more than 12 credit hours in CET 840 may be taken in a regular semester, nor more than 6 credits in a summer session.

Components: THE.

Grading: SUS.

Typically Offered: Fall, Spring, & Summer.

CET 850. Research in Residence. 1 Credit Hour.

Used to establish research in residence for the Ph.D. after the student has been enrolled for the permissible cumulative total in appropriate doctoral research. Credit not granted. May be regarded as full-time residence as determined by the Dean of the Graduate School.

Components: RSC.

Grading: SUS.

Typically Offered: Fall, Spring, & Summer.