

# Ph.D. in Environmental Science and Engineering (Interdisciplinary)

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The University of Texas at El Paso provides both outstanding resources and an extraordinary setting for the interdisciplinary doctoral program in Environmental Science and Engineering (ESE). The mission of UTEP's ESE program is to prepare the next generation of leading environmental problem solvers, whereby participants conduct research to understand components of the past, present, and future state of the Earth System and how society will need to adapt in order to sustain ecosystem goods and services and human health and well-being. The ESE program is one of the oldest and largest doctoral programs at UTEP and includes more than 100 participating faculty from 12 academic departments and research centers housed within six colleges. This campus-wide engagement of faculty facilitates student access to the most outstanding research facilities and faculty UTEP has to offer. Our students are recruited locally, nationally and internationally and gain employment in diverse domains that includes but is not restricted to research, academia, national labs, agencies, and nonprofit organizations.

## Admission Requirements

- Students with a Bachelors or graduate (Master's or above) degree in a discipline related to environmental science and engineering.
- General Graduate school requirements.
- GPA 3.5 or higher.
- Applicants from countries where English is not the first language are required to demonstrate English proficiency. Please consult the graduate school website for required scores.
- Two letters of reference from individuals qualified to judge your capacity to conduct doctoral-level research.
- Statement of purpose outlining your motivations for joining the program and how the program will benefit your career goals.
- Curriculum Vitae (CV) (including: name and contact details, work experience, education and qualifications, publications, attending conferences, and key skills) is requested.

## Degree Requirements

Specific course requirements for each student will be determined by the student's Doctoral Advisory Committee. However, each student must complete a total of at least 60 hours if they are accepted with an undergraduate degree and 36 hours if they are accepted having completed a master's degree in a related field. Students may be required by their Committee to complete leveling courses prior to starting ESE coursework; leveling courses are not considered part of the degree plan and credits from these courses do not count towards the degree. With the approval of the ESE Director, students entering the program with a master's degree or relevant graduate level courses on an official transcript can transfer up to 24 semester hours to advance standing toward their PhD degree. At least 24 hours of organized graduate-level coursework (including research hours) are required within the 60 hours counted towards completion of the doctoral degree. The balance of the 30 semester hours of organized coursework will be fulfilled by a selection of elective courses. Enrollment of the candidate in research and dissertation courses will complete the remainder of the program requirements.

Organized coursework must include the core classes listed below. A grade of 'B' or better must be obtained in classes qualifying for organized coursework. All students must complete a minimum of two (2) hours of ESE 6107 to fulfill the requirements of the degree. Up to four (4) additional hours of ESE 6107 may be taken as elective hours if approved. Students who have not reached candidacy are required to enroll in ESE 6107 (ESE Seminar) during the fall and spring semesters. At least two dissertation classes (ESE 6398/6399) must be completed following candidacy and may not be taken in the same semester. Students are required to complete and submit their milestone agreement to the ESE Coordinator in the first semester of study and an Individual Development Plan by the end of the first year of study.

Students are encouraged to begin research germane to their dissertation topic as early as possible during their course of study. Research should address a topic within the field of environmental science and engineering that requires interdisciplinary problem solving. The student must identify a Dissertation Supervisor and Doctoral Committee during the first two semesters of full-time or part-time participation in the ESE program. The committee must be composed of at least four members that include at least three UTEP tenure track faculty from more than one department. A committee meeting must be held at least annually and at least once prior to submission of the research proposal.

## Doctoral Candidacy Requirements

For a student to pass to candidacy and prior to enrolling in Dissertation classes (ESE 6398/6399), the following must be completed – i) all course requirements except for the completion of Dissertation (ESE 6398/6399); ii) the committee meets with the student at least once prior to the proposal defense; iii) students submit a written copy of their research proposal to the ESE Coordinator and their committee at least two weeks prior to their advertised proposal defense; iv) the proposal must be defended in an oral presentation advertised by the ESE Coordinator and delivered by the student to a public audience, after which the student must answer questions and provide clarification to their advisor and committee in a closed door session; v) a students' milestone agreement and Independent Development Plan must be current; and vi) all necessary forms required by the graduate school must be completed. Following passage to candidacy, students are required to enroll for a minimum of three credits in order to be considered full time.

The dissertation must demonstrate a students' capacity to perform independent and original research focused on a significant problem in Environmental Science and Engineering that includes elements considered publishable in peer reviewed literature relevant to the field of study. Students should enroll in ESE 6398 during the first term of dissertation and ESE 6399 each term thereafter. To graduate, the following must be completed – i) all degree requirements must be completed within eight years as required by the Graduate School; ii) an electronic copy of the dissertation as well as an abstract that is less than 350 words must be submitted to the Graduate School for format checking prior to the scheduled defense date; iii) students must submit a copy of their written dissertation and dissertation abstract to the ESE Coordinator and their committee at least two weeks prior to their dissertation defense; iv) the doctoral candidate must successfully defend their dissertation before a public audience and their Doctoral Advisory Committee. The student will receive email confirmation from the Graduate School after the format of their dissertation has been approved.

## Dissertation

The dissertation defense must be presented in an advertised public oral presentation after which the audience will be permitted to ask questions. The student will then enter a closed door session with their committee where they may be asked additional questions and/or may receive requests for further clarification. In most cases, students will be required to address comments or concerns raised by the committee in the form of corrections to the dissertation prior to receiving the final approval of the committee. Following approval of all committee members, the approved dissertation must be submitted to the Graduate School in PDF format by the deadline as published in the Class Schedule along with a hard copy of the signature page that includes original signatures of dissertation committee members. Information on submission procedures can be found on the Graduate School website.

## Curriculum

### Semester-Hour Requirements

Code	Title	Hours
ESE Core Courses		8
Elective Courses *		22
Research		24
Dissertation (must be taken over 2 or more semesters)		6
<b>Total Hours</b>		<b>60</b>

\* Can include up to four (4) additional hours of ESE 6107 if approved/stipulated by the student's Doctoral Advisor/Committee.

Degree Plan

## Ph.D. in Environmental Science and Engineering

Required Credits: 60

Code	Title	Hours
<b>Required Courses</b>		
All courses require a grade of B or better:		
ESE 6307	Interdisciplin Envir Prob Solv	3
<b>Quantitative/Methodology</b>		
Select one of the following:		
BIOL 6328	Biostatistics	
CE 6332	Mod Methods/Engr Computation	
EDAD 6323	Educational Research Methods	
SOCI 6312	Quantitative Sociology	
or SOCI 6322	Qualitative Sociology	
A Core Course from the Data Science or Computational Science doctoral programs		
Other quantitative or methodology course with ESE Director approval		
<b>Graduate Seminar</b>		
ESE 6107	Graduate Seminar (Complete two semesters)	2
<b>Elective Courses</b>		
All elective courses require a grade of C or better:		
Select 22 hours from organized classess offered in at least two graduate, preferably doctoral programs offered at UTEP		
<b>Doctoral Research</b>		
ESE 6396	Doctoral Research	24

**Thesis:**

ESE 6398 & ESE 6399	Dissertation and Dissertation	6
<b>Total Hours</b>		<b>60</b>