

### **Ph.D. Track in Environmental Sustainability and Resilience**

Ph.D. students must complete a total of 63 credit hours including: 24 to 36 hours of classroom graduate-level courses, 6 credit hours of graduate seminar (EVEN 6102), and 21 to 33 hours of research (EVEN 6306).

Students should successfully complete the Ph.D. Qualifying Exam.

Students should successfully defend dissertation proposal and final dissertation.

The required core courses for Ph.D. track in Environmental Sustainability and Resilience will consist of the following courses:

1. EVEN 6345 Environmental Sustainability and Resilience (3 credit hours)
2. EVEN 6347 Data Science for Next Generation of Community Researchers (3 credit hours)
3. EVEN 6349 Graduate Professional Skills Development Lab (3 credit hours)
4. EVEN 6102 Environmental Engineering Graduate Seminar (1 credit hour; 6 times)
5. Choose at least two courses from the following: (6 credit hours)
  - EVEN 6308 - Fundamentals of Solid and Hazardous Waste Engineering (3 credit hours)
  - EVEN 6309 - Fundamentals of Air Quality and Pollution Control (3 credit hours)
  - EVEN 6316 - Fundamentals of Environmental Biotechnology (3 credit hours)
  - EVEN 6319 - Chemical Principles for Environmental Engineering Design (3 credit hours)
  - EVEN 6325 - Physical-Chemical Water Treatment Processes (3 credit hours)
6. Choose at least one environmental modeling or data course from the following: (3 credit hours)
  - EVEN 6318 - Environmental Systems Modeling (or other EVEN modeling course) (3 credit hours)
  - EVEN 6332 – Environmental Data Analysis (3 credit hours)
  - PSYC/SOCI - 5310 Data Analysis in Social Research (3 credit hours)
  - MEEN 6321 - Advanced Engineering Data Analysis and Optimization Methods (3 credit hours)
  - EDBL 63

EVEN 6320 - Environmental Risk Assessment and Management of Risk (3 credit hours)  
EVEN 6329 - Environmental Monitoring and Measurements (3 credit hours)  
EVEN 6340 - Decision Sciences for Environmental Systems (3 credit hours)  
EVEN 6341 - Environmental Informatics (3 credit hours)  
EVEN 6342 - Engineering Optimization for Environmental Systems (3 credit hours)  
EVEN 6343 - Environmental Management Systems (3 credit hours)  
EVEN 6354 - Environmental Regulations and Policy (3 credit hours)  
EVEN 6356 - Special Topics in Environmental Engineering (3 credit hours)  
EVEN 6356 – Sp Topic - Environmental Exposure Assessment (3 credit hours)  
IEEN 5320 - Fundamentals of Sustainable Engineering (3 credit hours)  
IEEN 5327 - Advanced Engineering Project Management (3 credit hours)  
PSYC 5331 - Lifestyles and Career Development (3 credit hours)  
SOC1 5303 - Advanced Research Methods (3 credit hours)  
EDBL 6393- Advanced Topics: Posthumanism (3 credit hours)  
EDBL 6393- Curriculum Theory (3 credit hours)  
GEOL 5312 – Geographical Information System (3 credit hours)  
GEOL 5352 – Remote Sensing (3 credit hours)  
RAMT 5351 A Systems Approach to Natural Resources Problem Solving (3 credit hours)

\*PhD students receiving funding from any active research grant or project can take internship/Co-op using EVEN 6304 only once during their study after nine semesters enrolled in the program with the approval of their research advisor and the Department Chair.

Students can take up to two courses (6 credit hours) outside the department by consulting with your research/academic advisor. One additional course may be taken outside the department (3 credit hours) with the approval of the departmental graduate committee.

From fall 2022 semester onwards (and thereafter), the Ph.D. Qualifying Exam will be taken on four Ph.D. core courses selected by consulting with your research/academic advisor and the Ph.D. Program Coordinator.

It is a new track in the Ph.D. Program of Environmental Engineering as proposed in the Graduate Research Traineeship project funded by the National Science Foundation.