

DOCTOR OF PHILOSOPHY IN ENVIRONMENTAL ENGINEERING

The doctoral degree in environmental engineering is awarded upon demonstration of an ability to make substantial creative contributions to knowledge in environmental engineering. The full-time doctoral program generally consists of at least two complete years of academic preparation, followed by at least one year of full-time research in residence at the university. The coursework must include the core environmental engineering courses listed in the section describing the Master of Science in Environmental Engineering.

To be admitted to candidacy, students must pass a qualifying examination, which involves an oral presentation of two research papers selected by the student's adviser. The qualifying examination is administered by a research committee approved by the chairperson. The exam is diagnostic in nature. The results of the exam will determine the student's potential for success in the Ph.D. program. The department may waive this requirement for students who hold an M.S. degree from Illinois Institute of Technology in the same field. This examination should be completed within three semesters of entry into the program.

Next, candidates must complete a comprehensive examination, which is an oral examination that is administered by a research committee approved by the chairperson. The candidate presents the research proposal and answers questions of a general professional nature. The research project must be in harmony with the interests of the faculty and with the facilities of the department. The candidate should pass the comprehensive examination at least one year prior to the date of graduation.

Although doctoral research can begin upon admission to the Ph.D. program, the major portion of the research should take place after the qualifying examination is passed and the research proposal (comprehensive exam) is approved by the research committee. Research will be conducted under the supervision of a full-time faculty member and students should work to involve all members of their research committee.

The preliminary thesis draft must meet the approval of all members of the research committee. An oral examination in defense of the thesis is given as an open university seminar. The thesis defense must meet with the approval of the research committee; if it does not, the committee has the authority to determine whether or not to grant a re-examination.

Curriculum

Requirement	Credits
Minimum Credits Required	84
Maximum 400-Level Credit	9
Maximum Transfer Credit	32

Code	Title	Credit Hours
Required Courses		(12)
ENVE 501	Environmental Chemistry	3
ENVE 506	Chemodynamics	3
ENVE 542	Physicochemical Processes in Environmental Engineering	3
CAE 523	Statistical Analysis of Engineering Data	3
or MATH 474	Probability and Statistics	
or MATH 564	Regression	
or MMAE 500	Data Driven Modeling	
or BME 533	Biostatistics	
or STAT 514	Applied Computational Statistics for Analytics	
Major Electives		(15)
Select a minimum of 15 credit hours of major electives from the list below:		15
ENVE 463	Introduction to Air Pollution Control	3
ENVE 495	Environmental Capstone Design	3
ENVE 503	Occupational and Environmental Health and Safety	3
ENVE 513	Biotechnological Processes in Environmental Engineering	3
ENVE 522	Global Environmental Change and Sustainability Analysis	3
ENVE 523	Geoenvironmental Engineering	3
ENVE 528	Modeling of Environmental Systems	3
ENVE 543	Carbon Capture, Utilization, and Storage	3

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ENVE 561	Design of Environmental Engineering Processes	3
ENVE 576	Indoor Air Pollution	3
ENVE 577	Design of Air Pollution Control Devices	3
ENVE 578	Physical and Chemical Processes for Industrial Gas Cleaning	3
ENVE 580	Hazardous Waste Engineering	3
ENVE 597	Special Problems	1-20
General Electives		(21-33)
Select 21 to 33 credit hours of electives		21-33
Ph.D. Research		(24-36)
ENVE 691	Research and Thesis Ph.D.	24-36

¹ Transfer credit may include a maximum of 32 credit hours from a completed master's degree

² General elective coursework can include courses from CAE, CHE, CHEM, CS, EG, ENVE, EMGT, MATH, MMAE, SAM or others are acceptable with advisor approval