ENVIRONMENTAL ENGINEERING (CERT)

Graduate Certificate in Environmental Engineering
Unit: Speed School of Engineering (GS) (https://engineering.louisville.edu)
Department: Civil and Environmental Engineering (https://engineering.louisville.edu/academics/departments/civil/)
Academic Plan Code(s): ENVECEEGS

Program Information

Students interested in increasing their knowledge of Environmental Engineering can take a series of courses and earn a certificate. The certificate program offers courses in the following disciplines:

- Civil and Environmental Engineering
- Chemistry
- Biology
- Mechanical Engineering
- Chemical Engineering

This is a certificate program, not a degree program. The Graduate Certificate in Environmental Engineering is awarded while completing the graduate degree program (MEng, MS, or PhD) at J. B. Speed School of Engineering.

Admission Requirements

Admission to the J.B. Speed School of Engineering division of higher studies (MEng) or the graduate school (MS or PhD) in Engineering.

All admission applications for the graduate certificate program shall include the following:

- Graduate application (http://louisville.edu/graduate/futurestudents/apply-materials/application/) for the Graduate School;
- Application fee;
- Official transcript certifying at least a bachelor's degree. All transcripts not in English must be certified as authentic and translated verbatim into English.
- A baccalaureate degree (or equivalent) from an accredited institution or current enrollment in a graduate Speed School program.

All students enrolled in a graduate certificate program are expected to make steady and satisfactory progress toward the completion of the certificate. Students who are not enrolled for a period of more than 12 months will be considered to have withdrawn from the certificate program. Students who seek to return after such a period of time must contact the graduate program director.

Certificate Requirements

The following certificate requirements are mandatory for all graduate certificate candidates:

1. The certificate program of study must be completed with a 3.00 GPA or better for all graduate courses used to satisfy certificate requirements while enrolled in the graduate degree program (MEng, MS, or PhD). The student, if eligible, must apply for the certificate prior to graduation.
2. Completion of a graduate degree program at J.B. Speed School of Engineering (MEng, MS, or PhD).
3. Graduate certificate students must take all certificate coursework at the University of Louisville. **No transfer credits will be accepted toward a graduate certificate.**

Program Requirements

Coursework

Code	Title	Hours
Environmental Engineering Electives (500-level, see below) *		0-6
Environmental Engineering Electives (600-level, see below) *		6-12
Minimum Total Hours		**12**

*Students must complete twelve (12) credit hours, with at least six (6) credit hours at the 600 level. Courses are to be selected from the following lists. All prerequisites must be met. Graduate courses not shown in the lists below require approval from the Certificate Program Director.

Certificate courses do not constitute a degree program, but may be applied toward MEng, MS, or PhD degree requirements.

Other requirements

Completion of a graduate degree program at Speed School of Engineering (MEng, MS, or PhD).

Approved Environmental Engineering Elective Courses

Code	Title	Hours
Approved 500-level Environmental Engineering Electives		**0-6**
Students may take up to 6 credit hours from the following:		
CEE 570	Applied Hydraulics	
CEE 571	Applied Hydrology	
CEE 572	Open Channel Hydraulics	
CEE 573	Groundwater Hydrology	
CHE 509	Environmental Processes and Systems	
CHE 533	Chemical Engineering Safety and Health	
CHE 534	Industrial Waste Management	
CHE 535	Pollution Prevention	
ME 570	Sustainable Energy Systems	
ME 580	Air Pollution Control	
BIOL 522	Aquatic Ecology	
Approved 600-level courses:		**6-12**
Students must take at least 6 credit hours from the following:		
CEE 670	Advanced Hydraulics	
CEE 673	Advanced Hydrology	
CEE 674	Water Resources Systems	
CEE 675	Surface Water Quality Modeling	
CEE 681	Green Engineering & Sustainable Design	
CEE 694	Special Topics in Civil Engineering (Advanced Environmental Processes & Systems)	
CEE 694	Special Topics in Civil Engineering (Air Quality)	
CEE 694	Special Topics in Civil Engineering (Strean & Wetland Restoration; Wetland Design)	
CEE 694	Special Topics in Civil Engineering (Watershed Erosion, Sedimentation, and Water Qaulity)	

CHE 620	Transport Phenomena I	
CHE 637	Advanced Stagewise Processes	
CHE 638	Advanced Absorption	
CHE 650	Membrane Separations	
CHE 662	Advanced Process Control	
CHE 694	Special Topics in Chemical Engineering	
CHEM 622	Analytical Separations	
BIOL 644	Global Change Ecology	
BIOL 662	Advanced Ecosystems Ecology	
ME 614	Heating, Ventilating, and Air Conditioning	
ME 667	Solar Energy Applications	
Total Minimum Credit Hours		**12**