

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 Speed School of Engineering.

Admission Requirements

Admission to the 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 Students who are not enrolled for a period of more than 12 months will be considered to have withdrawn from the certificate program.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:

- 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.

- Completion of a graduate degree program at Speed School of Engineering (MEng, MS, or PhD).
- 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 |
| <i>Students may take up to 6 credit hours from the following:</i> | | |
| 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 |
| <i>Students must take at least 6 credit hours from the following:</i> | | |
| 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 (Stream & Wetland Restoration; Wetland Design) | |
| CEE 694 | Special Topics in Civil Engineering (Watershed Erosion, Sedimentation, and Water Quality) | |

| | | |
|-----------------------------------|--|-----------|
| 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 662 | Advanced Ecosystems Ecology | |
| ME 614 | Heating, Ventilating, and Air Conditioning | |
| ME 667 | Solar Energy Applications | |
| Total Minimum Credit Hours | | 12 |