

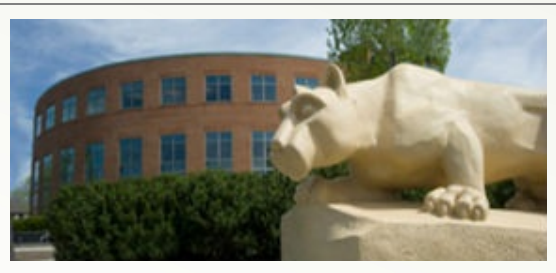
Master of Science in Civil Engineering

The Master's of Science in Civil Engineering (MS CE) program is designed to meet the needs of engineering professionals in the vital area of sustainable infrastructure with specialties in structural, transportation, and water resources engineering.

This new degree will complement Penn State Harrisburg's existing undergraduate degree in civil engineering and the graduate degree in environmental engineering, and will fulfill a gap in engineering graduate education in the region.

The flexibility of the program makes it attractive for part-time or full-time students, with fellowships and assistantships potentially available for full-time students. The program works with regional firms and governmental agencies to offer an active internship program for students who wish to combine practical experience with a full-time education.

Classes will be offered in the evening to accommodate working professionals. In addition to coursework, students will have the opportunity to work with faculty members on research projects.



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PennState
Harrisburg

**School of Science,
Engineering, and Technology**

**Master of Science in Civil
Engineering**

Curriculum

The MS CE Program consists of 31 credits total:

- 18 credits at the graduate-only, 500-or higher level.
 - This includes 6 credits of master's thesis research (CE 600).
- Completion of both online and in-class research ethics training.
- 1 credit Colloquium course (CE 590)
- 3 credit course in advanced mathematics or statistics (choice of EMCH 524A or STAT 500)
- Four (4) civil engineering courses selected by student as specialization classes.
 - 9 credits must be at 500 level
- 9 credits of relevant electives from engineering, science, policy, or business.
 - Pre-approval is required for courses not on the master course list.

Notes

- The degree requires a quality master's thesis based upon independent research.
- If a student does not have the appropriate prerequisites for a course in the graduate program, the student will be required to take the prerequisite prior to the graduate course. That prerequisite potentially would not count toward the graduate degree.
- The degree must be completed in no more than 6 years.

Courses

400 Level Courses

Course Number	Course Title
CE 421	Transportation Design
CE 422	Transportation Planning
CE 423	Traffic Operations
CE 432	Construction Project Management
CE 435	Foundation Engineering
CE 436	Construction Engineering Materials
CE 441	Structural Design of Foundations
CE 447	Structural Analysis by Matrix Methods
CE 449	Advanced Structural Design
CE 462	Open Channel Hydraulics
CE 475	Water Quality Chemistry
E MCH 400	Advanced Strength of Materials and Design
ENVE 417	Hydraulic Design

May not be repeated for graduate credit if taken in support of an undergraduate degree; no more than 12 credits allowed.

500 Level Courses

Course Number	Course Title
CE 512	Soil Mechanics II
CE 513	Advanced Foundation Engineering
CE 523	Analysis of Transportation Demand
CE 541	Structural Analysis
CE 545	Metal Structure Behavior and Design
CE 543	Prestressed Concrete Behavior and Design
CE 544	Design of Reinforced Concrete Structures
CE 548	Structural Design for Dynamic Loads
CE 549	Bridge Engineering I
CE 550	Engineering Construction Management
CE 555	Groundwater Hydrology: Analysis and Modeling
CE 561	Surface Hydrology
CE 570	Aquatic Chemistry
CE 581	Pavement Management and Rehabilitation
CE 582	Pavement Design and Analysis
CE 583	Bituminous Materials and Mixtures
CE 584	Concrete Materials and Properties
ENVE 550	Chemical Fate and Transport
EMCH 524A	Mathematical Methods in Engineering
STAT 500	Applied Statistics

Note: Electives may also be chosen from 500-level offerings in engineering, mathematics, statistics, or computer science with department pre-approval.

Program Requirements for Admission

Requirements	More Information
GPA	A minimum GPA of 3.0 (on a 4.0 scale).
Education	A baccalaureate degree in engineering or a technology-related field from an accredited institution.
Supporting Materials	<ul style="list-style-type: none"> ✓ Three (3) recommendation letters attesting to the ability to perform graduate-level academic work and research. ✓ GRE (General only) test scores. ✓ A personal statement, which should address why the applicant is interested in the graduate Civil Engineering program, including the area(s) of specialization the student wants to pursue. Note : For accepted students, this personal statement also is used to match you with an initial academic advisor.

Application Deadlines

Semester	Deadline
Fall	August 1
Spring	December 15
Consideration for a Fall assistantship	December 15 of previous year