CIVIL ENGINEERING, MSE

Our Master of Science and Engineering (M.S.E.) (https://engineering.jhu.edu/case/graduate-programs/masters-program/) Programs develop a sound understanding of the scientific principles upon which engineering research and practice are based. Different aspects of learning are integrated through classroom, laboratory instruction, and independent study experiences. Graduates of the programs possess critical thinking skills, the ability for both independent and team problem-solving, and a sense of the excitement of engineering creativity and design. The programs also develop communication skills necessary for the graduates to function in teams and to deal with other professions in public and private arenas. Their progressive education furthers student understanding of the context in which engineering is practiced in modern society. Our Master’s programs combine fundamental training with real-world experience. Thus, the programs educate leaders for tomorrow, providing the tools and perspectives for a lifetime of learning, opportunities, and professional advancement. Build your knowledge base with coursework in systems, mechanics, structures, computational methods, and uncertainty quantification. Apply that knowledge in our externship program while you network with professional engineers and gain valuable experience with your dream employer.

CaSE currently offers two MSE degree options:

- Civil Engineering (https://engineering.jhu.edu/case/graduate-programs/masters-program/m-s-e-civil-engineering/) – focus on mechanics of materials, probabilistic methods, fire engineering, earthquake engineering, infrastructure design for resilience
- Systems Engineering (https://engineering.jhu.edu/case/graduate-programs/masters-program/m-s-e-systems-engineering/) – focus on network modeling, mathematical modeling, optimization, analysis of complex infrastructure systems, public health, urban resilience

Typically limited financial support is available for M.S.E. students. Funding decisions will be made on an individual basis by the Department of Civil and Systems Engineering and will be communicated during the admissions process.

Requirements for Admission:

1. Online Application (https://applygrad.jhu.edu/apply/?sr=9acedd1-d563-4a68-a7b8-a023986c3cb7) in the Slate application system
2. Three Letters of Recommendation
3. Statement of Purpose

The statement (1-3 pages) should outline your background and interests in civil or systems engineering, reasons why you are seeking to pursue a graduate degree, why you believe JHU is a good fit for you, specific career goals, events, or places that have inspired you, etc.
4. GRE scores
5. Transcripts

Official copies of transcripts are not required for application review purposes. Applicants are asked to upload unofficial transcripts in the Academic History portion of this application. If you receive an offer and choose to accept it, you must contact your institution to have your official academic transcripts sent directly to the Office of Engineering Graduate Admissions.

***For international students***

For all foreign academic work you strongly recommend that you submit a professional credential evaluation from World Education Services (WES). (https://www.wes.org/) Credential evaluations allow the departments to better assess your academic records. These evaluations do not replace the transcript, you are still required to upload these documents as instructed.

1. TOEFL/IELTS scores or English Language Proficiency Test Waiver (https://livejohnshopkins-my.sharepoint.com/:w/g/personal/avanhor3_jh_edu/EbMorU0ALe1E14qtfiC7UBc6cGW9F-VhkmCBYy4GbKsQ/?e=Xl1TJZ) (For international students only)

Visit Information for International Students (https://engineering.jhu.edu/graduate-admissions/international-students/) to read our English Language Proficiency Policy (https://livejohnshopkins-my.sharepoint.com/:w/g/personal/avanhor3_jh_edu/EbMorU0ALe1E14qtfiC7UBc6cGW9F-VhkmCBYy4GbKsQ/?e=Xl1TJZ) for detailed information, including preferred minimum test scores. You may request an English Language Proficiency Test Waiver by contacting the Engineering Graduate Admissions Office by emailing WSEGradAdmissions@jhu.edu. Applications require a self-reported score for review. Many applicants see their official scores arrive after the application submission deadline.

1. Admissions Fee – $25. Please see the admission fee waiver policy (https://engineering.jhu.edu/admissions/graduate-admissions/full-time-programs/how-to-apply/general-application-requirements/)
2. CV/Resume

Optional:

- Personal Statement
- Sample of Work

Program Requirements (Civil Engineering (https://engineering.jhu.edu/case/graduate-programs/masters-program/m-s-e-civil-engineering/))

Consistent with the Systems Engineering MSE degree (https://engineering.jhu.edu/case/graduate-programs/masters-program/m-s-e-systems-engineering/) offered out of CaSE, a total of eight (8) courses must be taken and approved by the advisor. Seven (7) courses must be technical. Courses may be requested for substitution at the advisor’s discretion. Four (4) courses must be taken from civil engineering – EN.560.XXX or EN.565.XXX. One of the 8 courses can be a professional development class, such as those offered by the Center for Leadership Education.

Our Master’s programs combine fundamental training with real-world experience. Thus, the programs educate leaders for tomorrow, providing the tools and perspectives for a lifetime of learning, opportunities, and professional advancement. Build your knowledge base with coursework in systems, mechanics, structures, computational methods, and uncertainty quantification. Apply that knowledge in our externship program while you network with professional engineers and gain valuable experience with your dream employer.

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Masters students are offered 2 options (different combinations of courses, seminars, externship, and research) in order to obtain their degree. There is also a Bachelor’s/Master’s program available.

Course-Only MSE Requirements
The most common path for M.S.E. graduate students is to complete the degree through coursework alone. The M.S.E. degree requirements are as follows:

1. Minimum course requirements: 8 courses** at the 600-level or above:
   - 4 of which must be from civil engineering - EN.560.XXX or EN.565.XXX
   - 7 of which must be technical
2. Required courses, but not counted towards minimum course requirements:
   - Civil Engineering Graduate Seminar - Fall semester – EN.560.691
   - Civil Engineering Graduate Seminar - Spring semester – EN.560.692
   - Civil Engineering Graduate Seminar
   - Academic Ethics short course EN.500.603 Graduate Orientation and Academic Ethics
   - Responsible Conduct of Research short course: AS.360.624 Responsible Conduct of Research (Online) or AS.360.625 Responsible Conduct of Research
3. Acceptable grades: B- and above. Only one course with a grade of C or C- are allowed toward the degree requirements
4. First three semesters must be full-time. The fourth semester can be part-time.*** It is expected that the degree will be completed in one year with the student enrolling in 4 courses per semester, although in select cases students may require a third semester of study
5. CPT internship credits for international students do not count toward the completion of an M.S.E. degree
6. Externship
7. Transfer credits are not permitted

*Students must comply with all requirements stipulated by the Whiting School of Engineering Academic Policies and Procedures as outlined at https://engineering.jhu.edu/graduate-studies/academic-policies-procedures-graduate/

**Academic advisors, in consultation with the faculty in the department, will determine whether the 8 courses leading to this degree are appropriate and if they have been completed satisfactorily.

***See the department Sr. Academic Program Coordinator or Director of Graduate Studies to determine if you are eligible for part-time status.

Notes:
1. Students are expected to maintain a GPA of 2.6 each semester or be placed on probation. See the Probation Policy for master’s students (https://engineering.jhu.edu/civil/graduate-programs/masters-program/policies-and-procedures/) for more details.

MSE with Thesis Requirements
The M.S.E. with thesis option is primarily intended for students interested in pursuing a Ph.D. The M.S.E. degree requirements are as follows:

1. Minimum course requirements: 7 courses** at the 600-level or above:
   - 4 of which must be from civil engineering - EN.560.XXX or EN.565.XXX
   - 6 of which must be technical
2. Required courses, but do not count towards minimum course requirements:
   - Research course with research advisor – Fall semester
   - Research course with research advisor – Spring semester (a two-semester research sequence)
   - Civil Engineering Graduate Seminar - Fall semester – EN.560.691
   - Civil Engineering Graduate Seminar - Spring semester – EN.560.692
   - Civil Engineering Graduate Seminar
   - Academic Ethics short course EN.500.603 Graduate Orientation and Academic Ethics
   - Responsible Conduct of Research short course (required): AS.360.624 Responsible Conduct of Research (Online) or AS.360.625 Responsible Conduct of Research
3. Acceptable grades: B- and above. Only one course with a grade of C or C- are allowed toward the degree requirements
4. Final essay that is approved by the research advisor and one additional reader who is required to be a full-time departmental faculty member. Any external reader must be approved by the Department Chair
5. Research presentation in a public forum attended by two members of the WSE faculty or other faculty approved by the Department Chair
6. First three semesters must be full-time. The fourth semester can be part-time.*** The M.S.E. with thesis program is expected to be completed in 3-4 semesters with the student enrolled in 2-3 courses per semester in addition to research. Summer research is typical but not necessary and is left to the discretion of the student and advisor.
7. CPT internship credits for international students do not count toward the completion of a M.S.E. degree
8. Externship
9. Transfer credits are not permitted

*Students must comply with all requirements stipulated by the Whiting School of Engineering Academic Policies and Procedures as outlined at https://engineering.jhu.edu/graduate-studies/academic-policies-procedures-graduate/

**Academic advisors, in consultation with the faculty in the department, will determine whether the 7 courses leading to this degree are appropriate and if they have been completed satisfactorily.

***See the department Sr. Academic Program Coordinator or Director of Graduate Studies to determine if you are eligible for part-time status.

Notes:
1. Students are expected to maintain a GPA of 2.6 each semester or be placed on probation. See the Probation Policy for master’s students
Civil Engineering, MSE

(https://engineering.jhu.edu/civil/graduate-programs/masters-program/policies-and-procedures/) for more details.

Combined Bachelor’s/Master’s Program

All Combined Bachelor’s/Master’s students must meet the requirements stipulated above for the respective MSE program (course-only or thesis program) with the following exception:

- The Department of Civil and Systems Engineering will accept one course from JHU undergraduate studies at the 400-level or above toward the course requirements listed above.

Notes:

1. Required seminars, EN.500.603 Graduate Orientation and Academic Ethics and AS.360.624 Responsible Conduct of Research (Online)/AS.360.625 Responsible Conduct of Research courses are less than 3 credits each and not counted towards minimum course requirements.

2. Students are expected to maintain a GPA of 2.6 each semester or be placed on probation. See the Probation Policy for master’s students (https://engineering.jhu.edu/civil/graduate-programs/masters-program/policies-and-procedures/) for more details.