

# COMPUTER SCIENCE, MASTER OF SCIENCE IN ENGINEERING

The Master of Science in Engineering Computer Science (M.S.E. CS) is a residential program offered by the Department of Computer Science. The M.S.E. CS offers an official concentration in Human Language and Technology (<https://www.clsp.jhu.edu/human-language-technology-masters/>); the only CS concentration jointly administered with the Center for Language and Speech Processing. Most students complete the program in three full-time, residential semesters of which two full-time, resident semesters as a graduate student are required. Students interested in part-time/remote (nonresidential) study should refer to the Engineering for Professionals (<https://ep.jhu.edu/>) program.

Entering students are expected to have completed a program of study equivalent to that required by the B.S. in computer science. Applicants from other disciplines are expected to have coursework (or equivalent experience) in intermediate programming (C++ and Java), data structures, computer system fundamentals, and mathematical foundations for computer science. Upon admission to the M.S.E program, a student is assigned a graduate advisor from the Department of Computer Science who must approve the courses to be applied to the M.S.E. degree.

M.S.E. students are not normally eligible for tuition waivers, but may be able to work on campus up to 19.99 hours per week for hourly rates if they find campus employment through the University Experiential Learning (<https://studentaffairs.jhu.edu/studentemployment/>) office. While teaching and research assistant positions are available only to enrolled PhD students, there are positions available to M.S.E. students, such as course assistants, or a variety of other roles across the university. The CS course assistant application opens prior to the start of each semester for specific courses in need.

## Program Requirements

The Department of Computer Science classifies its courses into five sub-areas: Applications, Reasoning, Software, Systems and Theory. All M.S.E. candidates must complete at least one course (3 class hours/credits each) from four of the five areas. A current listing of courses with area designators ([https://livejohnshopkins-my.sharepoint.com/:b:/g/personal/jhoulah1\\_jh\\_edu/ESKGUDNnnXVJp0WDSinjuDkBTyLcfffMt46L053krZA4RQ/?e=KPQe9k](https://livejohnshopkins-my.sharepoint.com/:b:/g/personal/jhoulah1_jh_edu/ESKGUDNnnXVJp0WDSinjuDkBTyLcfffMt46L053krZA4RQ/?e=KPQe9k)) is provided on the departmental website. The areas are also encoded as POS (program of study) tags in SIS. M.S.E. students must also complete an additional three elective courses (chosen from any CS area or from closely related departments such as Electrical and Computer Engineering, Cognitive Science, Mathematics, or Applied Mathematics and Statistics) approved by the advisor, for a total of eight graduate-level courses.

In addition to the eight courses, a student must elect one of the following options in order to fulfill the degree requirements:

- Two additional (graduate-level) courses in Computer Science, approved by the advisor as above.
- A research project including an approved report (that will be made publicly available) supervised by a faculty member that has a primary or joint appointment in Computer Science or has a Computer Science affiliate as a co-advisor.
- An original, faculty-approved master's thesis, submitted to the Milton S. Eisenhower Library through the ETD process.

Ph.D. students who have satisfied their Ph.D. qualifying course requirements and completed their first qualifying project are deemed to have also met the M.S.E. degree requirements and may be able to confer with the M.S.E. along the way to their Ph.D. (unless more than two course requirements have been satisfied using courses transferred from other institutions). Please refer to the Ph.D. program information for details and timing.

All M.S.E. degree candidates are encouraged to regularly attend the department seminars.

## Course Requirement Details

- All courses counted toward the M.S.E. degree requirement must be taken at a graduate-appropriate level. In the Department of Computer Science, this includes courses that are 600-level and above, as well as 400-level courses only for students in the combined B.S./M.S.E. program who have not yet switched to graduate status.
- At most, two courses with grades less than B- may be counted toward the coursework requirements. No courses with grades less than C- may be counted.
- The overall grade point average of the courses counted toward the coursework requirements must be a 3.0 or higher (B average).
- At most, two independent study courses can be counted toward the course requirements.
- Other than independent study courses, no courses with grades of P or S can be counted toward the coursework requirement. Courses with grades of P or S will not be included in the grade point average calculation.
- One of the courses required for the M.S.E. degree, but only one, can be replaced by 3 credits from comparable short courses.
- A majority of the courses counted toward the degree must be taught in the Department of Computer Science.
- At most, two courses can be transferred from graduate programs of other institutions to be counted toward the degree requirements. Such transfer courses must be approved by the student's faculty advisor and the department. It is the obligation of the student to provide all necessary data to the Department of Computer Science regarding the course(s) for which transfer credit is being requested.
- Students in the combined B.S./M.S.E. program may transfer up to two graduate-qualified courses which also are counted toward the undergraduate degree, as well as any other graduate-qualified courses taken while an undergraduate which are not counted toward the undergraduate degree.
- At most, two courses completed in the Engineering for Professionals program can be counted towards the degree requirements with advisor approval.
- The 1-credit, "Selected Topics" and "Seminar" courses coded 601.8XX and 601.7XX respectively do not count towards degree requirements.
- A grade of D or F can result in probation; a second D or F is cause for being dropped from the program.
- Every student must successfully pass Academic Ethics (EN.500.603 Graduate Orientation and Academic Ethics).
- All master's students are required to complete the online Responsible Conduct of Research course as a baseline (<https://engineering.jhu.edu/research/resources-policies-forms/responsible-conduct-of-research-training-for-students-and-postdoctoral-fellows-revised-spring-2020/>). Any master's student engaged in research for payment or to help meet degree requirements and receiving payment from NIH training grants or fellowships must take the in person course—AS.360.625 Responsible Conduct of Research. All

other students can take the course online—AS.360.624 Responsible Conduct of Research (Online). Instructions for accessing and signing up for the course can be found here (<http://engineering.jhu.edu/wse-research/resources-policies-forms/responsible-conduct-of-research/online-training-course-for-the-responsible-conduct-of-research/>). Additional information regarding this training can be found at this webpage (<http://eng.jhu.edu/wse/page/conduct-of-research-training/>). Students will not receive a diploma until the course has been completed.