SYSTEMS ENGINEERING (ENSE)

Graduate Degree Program
College: Engineering

Abstract

Students in the broadly-based, cross-disciplinary Master of Science in Systems Engineering (ENSE) program at ISR benefit both academically and professionally by:

- Being exposed to a wide range of systems engineering principles and software tools tailored toward support for visual modeling of systems, requirements engineering, system-level modeling, optimization and trade-off analysis, and human factors engineering.
- Becoming familiar with the financial and management issues associated with complex engineering systems.
- Acquiring a deep understanding of one particular application area.
- Becoming familiar for opportunities for leadership within the systems engineering profession.
- Designed with substantial industry input, the ENSE curriculum represents the University of Maryland's first multi-college graduate degree program involving the A. James Clark School of Engineering.

In addition to the technical management of systems projects, the ENSE program covers a wide range of topics, from systems definition, requirements and specifications, to systems design, implementation, and operation. Students specialize in one technical area, selected from computer and software systems, communication and networking systems, signal processing systems, control systems, manufacturing systems, operations research, transportation systems, and robotics. The ENSE program draws upon the extensive engineering, computer science and management experience of the of University of Maryland faculty. The program makes optimum use of the university's advanced facilities, including extensive libraries of numerical, symbolic, and visualization software, engineering workstations, and wireless communication networks.

Financial Assistance

Prospective and current students may seek support for their studies through graduate research assistantships with ISR faculty or graduate fellowships. Students currently working in industry, the military, or the government, who plan to pursue their graduate studies part-time, might ask their employers about tuition assistance. All applicants are encouraged to explore sources of external funding; a number of comprehensive Internet sites, such as fastweb.com, offer detailed information and application instructions.

Contact

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Website: http://www.isr.umd.edu/education/systems-engineering-education (http://www.isr.umd.edu/education/systems-engineering-education/)

Courses: ENSE (https://academiccatalog.umd.edu/graduate/courses/ense/)

ADMISSIONS
GENERAL REQUIREMENTS

- Statement of Purpose
- Transcript(s)
- TOEFL/IELTS/PTE (international graduate students (https://gradschool.umd.edu/admissions/english-language-proficiency-requirements/))

PROGRAM-SPECIFIC REQUIREMENTS

- Graduate Record Examination (GRE)
- Letters of Recommendation (3)
- CV/Resume
- Description of Research/Work Experience

Application Deadlines

Type of Applicant	Fall Deadline	Spring Deadline
Domestic Applicants		
US Citizens and Permanent Residents	March 14, 2025	January 10, 2025
International Applicants		
F (student) or J (exchange visitor) visas; A,E,G,H,I and L visas and immigrants	February 7, 2025	September 26, 2024

RESOURCES AND LINKS:
Program Website: http://www.isr.umd.edu/education/systems-engineering-education (http://www.isr.umd.edu/education/systems-engineering-education/)
Application Process: gradschool.umd.edu/admissions/application-process/step-step-guide-applying (https://gradschool.umd.edu/admissions/application-process/step-step-guide-applying/)

REQUIREMENTS

- Systems Engineering, Master of Science (M.S.) (https://academiccatalog.umd.edu/graduate/programs/systems-engineering-ense/systems-engineering-ms/)

FACILITIES AND SPECIAL RESOURCES

Modern laboratory, computation, and networking environments play an indispensable role in both the development and day-to-day operation of the research and education programs at the Institute for Systems Research. In all of the ISR laboratories, real-life experiments and associated research studies are enabled through the integrated design of automation and information engineering systems. Computational environments support advanced numerical simulation, sensing and control, and automated design of complex heterogeneous engineering

systems. Networking environments play an indispensible role in enabling of interdisciplinary teams of faculty and students to work together. Prototype designs in both hardware and software have led to technological discoveries and patentable inventions.

ISR was established in 1985 as one of the first six National Science Foundation Engineering Research Centers (ERCs). Now a self-sustaining ERC, it is a permanent state-supported institute of the University of Maryland, within the A. James Clark School of Engineering. ISR faculty and graduate students perform basic and applied research with an emphasis on six major research directions: systems engineering methodologies and tools, global communications systems, sensor-actuated networks, next generation product-realization systems, societal infrastructure systems, and cross-disciplinary systems engineering education. ISR seeks a cohesive and balanced approach to the modeling, design, and control of large heterogeneous systems, bringing together a diversified team of outstanding engineers, scientists, and students to research, develop, and implement advances in systems engineering.