



DEPARTMENT OF ENGINEERING MANAGEMENT AND SYSTEMS

Frequently Asked Questions

The Department offers degrees in both engineering management and management science. What is the difference between them?

The engineering management program is designed to prepare engineers to plan, design, optimize and direct complex programs, processes and systems. The management science program is similar but is designed for a broader professional audience, and focuses on the concepts and methods of quantitatively-based problem solving and decision making. The two programs share a systems perspective. Both programs are rooted in the concepts and methods of operations research, applied statistics, optimization and simulation and differ primarily in admission requirements and electives.

- Admission into engineering management requires a Bachelor of Science degree in engineering or a physical science, and the electives are typically limited to engineering.
- Admission into management science requires a Bachelor of Science degree in other majors including business, as long the academic preparation includes at least nine semester hours of calculus, and the electives include courses in business, mathematics and other relevant disciplines.

What can I do with a degree in engineering management or management science?

Our graduates are experts in the concepts and use of quantitative methodologies for solving problems and making decisions in complex engineering systems. We offer practicing engineers and other professionals the analytical tools they need to plan, design, optimize and direct complex programs, processes, and systems – and manage the teams that make them work. UD graduates demonstrate the ability to quantify, model and simulate any situation to make the tough decisions required of engineering leaders. Our program provides the rigorous educational foundation that underlies current management initiatives, including those known as Six Sigma quality, robust engineering or lean manufacturing.

What are the basic program requirements?

Both programs require the completion of 36 semester hours (12 courses). Both require foundational courses in probability & statistics, operations research, computer simulation and a capstone project. The engineering management program also requires students to take foundational courses in engineering management and organizational systems. The management science program requires two additional management science courses to complete the core program requirements. Both programs provide students the opportunity to take at least 12 hours of elective courses that form the basis for their area of concentration.

What are some typical areas of concentration?

By carefully choosing electives, students can earn certificates that document concentrations in Six Sigma, Design of Experiments, and/or Systems Engineering. Students can also develop areas of concentration that relate to modern business and government initiatives in innovation and continuous improvement, reliability engineering, simulation modeling and analysis, production and manufacturing, project and program management, and organizational behavior.

Will I need to complete a thesis or project?

Both programs require a capstone project that demonstrates the student's ability to translate course work to a real-world application. The objective is to provide the student an opportunity to apply what has been learned toward the solution of a significant engineering or business problem. There is no thesis requirement for either program, but students interested in continuing their education at the doctoral level are encouraged to complete a thesis in lieu of a capstone project. Those funded via graduate assistantships are generally expected to complete a thesis.

Can I complete the program online?

Yes. While all courses in both the engineering management and management science degree programs are routinely offered on campus in a traditional classroom setting, most of those same courses are also “simulcast” over the Internet via web conferencing. This enables students who might be unable to attend classes on campus to nonetheless participate in real time via two-way audio, one-way video and chat. And all simulcast courses are also recorded, enabling both on-campus and Internet-based students the ability to playback classroom sessions at their convenience. In addition, the engineering management program is offered in a 100% online environment over 8-week terms. [Please click here to determine which environment might be right for you.](#)

Can international students take online courses?

Regretfully, as the result of United States Immigration and Naturalization Service (INS) regulations, international students attending the University of Dayton on F-1 or J-1 visas are limited to completing their degree program within the traditional classroom environment.