

Systems Engineering

Master of Engineering (M.E.)

Develop your practical skills and knowledge to manage complex systems more effectively



Overview

By pursuing a Master of Engineering in Systems Engineering, you will learn an innovative and unique curriculum in systems engineering. Topics include critical risk analysis, project management, support systems, and engineering processes, as well as courses relevant to specific fields of expertise. All courses are designed to meet the growing industry demand for trained systems engineers in fields such as:

- Aerospace
- Energy
- Natural resources and the environment
- Bioscience/Health

This program prepares you to develop and implement disciplined processes to manage complex engineered systems and produce a quality and reasonably priced product. Gain the skills and training you need to overcome engineering issues at a systems level, that can be applied to virtually any field of engineering.

Specific Admission Requirements

- B.S. degree in engineering, business, life sciences, or natural sciences from a regionally-accredited institution
- 3.0 GPA in undergraduate degree
- GRE scores are not required
- Completion of math through Calculus III or equivalent with grades of 'C' or better
- Completion of a college-level statistics course with a grade of 'C' or better

Program Completion Requirements

- 30 graduate credit hours
- This is a course work only degree and does not require completion of a thesis

Time Frame

Program duration varies based on previous course work, intensity of study, and course availability. You can expect the Master of Engineering program to take four to five years. Summer courses are not required.

Contact Us

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For more information

online.colostate.edu/degrees/systems-engineering



Degree Requirements and Curriculum

- Minimum of 30 credits of graduate work in approved program of study for the concentration
- Minimum of 24 credits must be earned at Colorado State University, 21 of which must be earned after formal admission to the University
- Minimum of 21 credits earned at Colorado State must be in the 500-level or higher
- 12 credits must be core courses, 9 credits depth courses, 6 credits electives, and 3 credits group study
- No independent study, research, internship, supervised college teaching, or practicum credits may be used toward the degree
- No more than two courses at the 400-level taken at Colorado State University are permitted
- No more than two 500-level or higher graduate level courses may be transferred from another accredited university
- Electives or course substitutions must be approved by an academic advisor

The program begins by establishing a strong foundation in systems engineering and concludes with collaborative group study. You are encouraged to start with ENGR 501, but can take the remaining courses in any order.

Core Courses (12 credits)

- CIS 600 - Information Technology and Project Management (3 cr.)
- ENGR 501 - Foundations of Systems Engineering (3 cr.)
- ENGR 530 - Overview of Systems Engineering Processes (3 cr.)
- ENGR 531 - Engineering Risk Analysis (3 cr.)

Courses in depth (9 credits)

- CIS 610 - Software Development Methodology (3 cr.)
- MECH 513 - Simulation Fundamentals (3 cr.)
- ENGR 510 - Linear Programming and Network Flows (3 cr.)
- ENGR 532 - Dynamics of Complex Engineering Systems (3 cr.)
- ENGR 520 - Engineering Decision Support/Expert Systems (3 cr.)

Electives (6 credits)

- 400-level or above course credits consistent with the program of study
- Contact your advisor for suitable elective courses

Group Study (3 credits)

- ENGR 597 - Group Study in Systems Engineering (3 cr.)

"The overview of the process, and the depth of knowledge about the process, could be really useful to apply to our group. I've already learned things from this program that I can take right to my job."

- Steve Brandl, Graduate -



Career Opportunities

- The field of systems engineering addresses the current trend toward increasingly complex systems that exist across a variety of disciplines, including aerospace, energy, environment, and biosciences. The demand for qualified systems engineers outweighs the current supply of educated and experienced individuals.
- Systems engineering was named by *CNNMoney.com* as the number one best job in America in 2009. This is based on the opportunity for growth and a good salary.
- You will gain the skills and training to overcome engineering issues at a systems level that can be applied to virtually any field of engineering.

Who should earn this degree?

- Engineers charged with managing complex systems of engineering project management
- Students interested in transitioning to a career in systems engineering, in fields including, but not limited to, aerospace, energy, environment, natural resources, and bioscience/health

READY TO GET STARTED?

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