The Department of Engineering offers two distinct MS degrees: the MS in Engineering (MSE) and the MS in Industrial and Systems Engineering (MSISE).

The MSE program provides advanced education in engineering, currently in two emphasis areas: mechatronics and railroad engineering. Mechatronics combines mechanical and electrical engineering with computers to create devices that make our lives better. Electrical and mechanical systems, controlled by computers, are at the core of a wide range of processes and products. Robots, the Mars Rover, a heart-lung machine, a computer controlled telescope, and a nano-scale microscope are all examples of mechatronics. Railroad engineering combines civil, mechanical, electrical, and industrial engineering in solving engineering problems for the railroad industry.

Industrial and systems engineering deals with the design and analysis of complex, human/machine systems. Industrial and systems engineers use a "big picture" or systems-oriented viewpoint to serve as management analysts, focusing on the people, materials, equipment and procedures needed for the most efficient and effective systems performance. Industrial and systems engineers analyze and evaluate systems against specified performance criteria, including efficiency, quality and safety, before new systems are created or old ones are modified. Industrial and systems engineering techniques can be applied in manufacturing and service industries, health care systems, governmental agencies and non-profit organizations.

Regular admission to the MSE or MSISE program requires an undergraduate GPA of at least 3.0 on a 4.0 scale and completion of the GRE test.

Additional Program of Study Requirements for the MSE and MSISE Programs

For a student to be awarded the MSE or MSISE degree, the student’s program of study must also satisfy the following requirements. Additionally, the program of study must be approved by the MSE/MSISE Program Director.

- At least 21 credit hours must be in graduate level engineering courses.
- No more than 9 credit hours of graduate coursework may be accepted as transfer credit from another institution.
- Any course taken as a prerequisite to engineering graduate study at CSU-Pueblo may not be counted towards graduation and must be taken for credit (i.e., not audited).

Advising

Each term, a student must meet with his or her adviser and be advised before the student can register for classes. Students are generally advised by the MSE/MSISE Program Director, unless the student is working on a thesis. Students working on a thesis are typically advised by their thesis advisers. A candidate for the MSE or MSISE degree must work with the adviser to design a program of study. The program of study must be approved by the adviser and department. This process is formalized by submitting a graduation planning sheet to the MSE/MSISE Program Director before the semester prior to graduation.

Admission Requirements

A successful applicant will have a quantitatively based baccalaureate degree from a regionally accredited college or university. Students
with non-quantitatively based baccalaureate degrees may be admitted conditionally, but additional prerequisites may be required. Admission to the MSE program or MSISE program requires prior admission to graduate study at CSU-Pueblo. Regulations governing graduate studies are contained in the Graduate Policies and Procedures Guide available from the Office of Admissions.

Prerequisite Requirements for Admission
Prior to being admitted to regular status, a student is required to demonstrate preparation for graduate study in the chosen emphasis (for the MSE) or in industrial and systems engineering (for the MSISE). This is done either by completing prerequisite background courses at CSU-Pueblo, by documenting satisfactory completion of equivalent coursework elsewhere, or by demonstrating equivalent work and/or life experience.

Students who do not possess a satisfactory prerequisite background may be admitted conditionally but be required to complete prerequisites. A plan for completing prerequisite requirements in a timely fashion is developed by the student and adviser and must be approved by the MSE/MSISE Program Director.

Graduate Assistantships
Full-time student admitted to the program with regular status are eligible to apply for merit-based, competitive graduate assistantships. Graduate assistants receive financial support from the department in the form of a stipend and/or remission of tuition and fees for one year (two semesters). A graduate assistant who is supported at a funding level equivalent to full-time tuition and fees is required to choose the Thesis Option.

An assistantship is renewable for a second academic year provided the student remains in good academic standing and makes satisfactory progress towards completion of the MSE or MSISE. An award made to a student who does not perform adequately in his or her duties may be rescinded after the first semester of the award period. In extreme circumstances, an award may be rescinded before the end of a semester.

An application for assistantship consists of a résumé and letter of interest addressed to the department chair. For the following academic year, the deadline for application for an assistantship beginning in the Fall semester is April 1. Subject to availability of funds, assistantships may be granted to begin in the Spring semester.

- Engineering 3+2 Plan, Joint Bachelor of Science/Master of Science (https://catalog.csupueblo.edu/college-of-education-engineering-and-professional-studies/engineering/engineering-3-2-plan-bs-ms)
- Engineering, Bachelor of Science in Engineering: Mechatronics Specialization (https://catalog.csupueblo.edu/college-of-education-engineering-and-professional-studies/engineering/bse-mechatronics-specialization)
- Engineering, Master of Science (https://catalog.csupueblo.edu/college-of-education-engineering-and-professional-studies/engineering/engineering-ms)
- Engineering, Minor (https://catalog.csupueblo.edu/college-of-education-engineering-and-professional-studies/engineering/engineering-minor)
- Industrial and Systems Engineering, Master of Science (https://catalog.csupueblo.edu/college-of-education-engineering-and-professional-studies/engineering/industrial-systems-engineering-ms)
- Industrial Engineering, Bachelor of Science in Industrial Engineering (https://catalog.csupueblo.edu/college-of-education-engineering-and-professional-studies/engineering/bs-industrial-engineering)
- Pre-Engineering Program (https://catalog.csupueblo.edu/college-of-education-engineering-and-professional-studies/engineering/pre-engineering-program)
- Railroad Engineering, Graduate Certificate (https://catalog.csupueblo.edu/college-of-education-engineering-and-professional-studies/engineering/railroad-engineering-graduate-certificate)
- Sustainability, Certificate (https://catalog.csupueblo.edu/college-of-education-engineering-and-professional-studies/engineering/sustainability-certificate)
- Sustainability, Minor (https://catalog.csupueblo.edu/college-of-education-engineering-and-professional-studies/engineering/sustainability-minor)