

The Ohio State University
College of Engineering

Engineering Sciences Minor (ENGRSCI-MN)

College of Engineering

Department of Engineering Education (EED) (<https://eed.osu.edu/>)

3042 Smith Lab; 174 West 18th Avenue

Columbus, Ohio 43210-1278; (614) 292-7923

Advisor: Dr. Dale Masel

Email: masel.2@osu.edu

This minor is designed for non-engineering students with an interest in learning more about technology's important role in today's society; and who may be working with engineers and technology based opportunities in the future. Specific learning goals include:

- Develop a basic understanding of the engineering design process
- Understand the capabilities and limitations of technologies and engineered systems
- Be able to make informed decisions about engineering activities and technologies
- Be able to work effectively as a member of a team including technology experts

The program advisor will work with you on selection of a suitable minor program to meet your specific career objectives. Upon completion of the minor, the advisor will approve and sign the Minor Program Form. You may then file the Minor Program Form with your college or school to receive a minor in Engineering Sciences.

Key Curriculum Components

- Core - Introduction to Engineering (4 credits)
- Engineering Science (2-4 credits)
- Technology and Society (3 credits)
- Capstone interdisciplinary teamwork experience (6 credits)
- Total Credits (15-17 credits minimum)

Note for students in the minor:

You will be expected to complete a first calculus course (e.g., Math 1131 or 1151). This course will fulfill the math requirement of all courses for the minor. Other prerequisites will depend on courses selected.

Core: 4 Credit Hours: The Engineering Sciences Minor contains the Introduction to Engineering course sequence: ENGR 1181.01 or .02 and ENGR 1182.01 or .02 or .03 (Honors permitted)

ENGR 1181.xx - Fundamentals of Engineering 1

Engineering problem solving utilizing computational tools such as Excel and Matlab; hands-on experimentation; ethics; modeling; teamwork; written, oral and visual communications.

ENGR 1182.xx - Fundamentals of Engineering 2

3-D visualization and sketching; introduction to CAD; engineering design-build; teamwork; written, oral and visual communications; and project management.

Engineering Science Options: 2-4 Credit Hours

If no prior courses in Engineering, choose from: AVIATN 2000, BIOMEDE 2000, DESIGN 3105, ISE 2040, ISE 2500, other Engineering courses by permission of the Minor Advisor.

For students who have taken OSU Engineering courses, choose from: AEROENG 2200, CBE 2200, CIVILEN 2050, CSE 2221, ECE 2000, ENVENG 3200, FABENG 2100, ISE 2400, MATSCEN 2010, MECHENG 2010, WELDENG 3001, other Engineering courses by permission of the Minor Advisor.

Technology and Society Options: 3 Credit Hours

COMPSTD 2340, 2367.04, ENGR 2361, 2362, 2367, HISTORY 2701, PHYSICS 2367, SOCIOL 3302

Capstone Experience: 6 Credit Hours

ENGR 5081.01 and ENGR 5081.02- Engineering Capstone Collaboration

Students contract to collaborate with an engineering capstone design team for two semesters and contribute their disciplinary expertise.

Engineering Sciences Minor Guidelines

Credit hours required A minimum of 15 to 17 hours. At least 6 credit hours need to be at the 3000-level or above.

Transfer and EM Credit Hours Allowed

A student is permitted to count up to 6 total hours of transfer credit and/or credit by examination toward the minor.

Overlap with the GE A student is permitted to overlap up to 6 cr hrs between the GE and the minor

Overlap with the Major and Additional Minor(s)

- The minor must be in a different subject than the major.
- The minor must contain a minimum of 12 hours distinct from the major and/or additional minors.

Grades Required

- Minimum C- for a course to be listed on the minor.
- Minimum 2.00 cumulative GPA for all minor course work.
- Course work graded Pass/Non-Pass cannot count on the minor.
- No more than 3 cr hrs of course work graded Satisfactory/Unsatisfactory may count towards the minor.

X193 Credits No more than 3 cr hrs

Approval Required The minor course work must be approved by the program advisor in the College of Engineering.

Filing the Minor Program form The minor program form must be filed at least by the time the graduation application is submitted to a college/school counselor. It will require the signature of the student and the student's major program advisor.

Changing the minor Once the minor has been filed, any changes must be approved by the Minor Advisor. This form is available on the College of Engineering website

College of Arts and Sciences
Curriculum and Assessment Services
306 Dulles Hall, 230 Annie & John Glenn Ave.
<http://artsandsciences.osu.edu>
Received 4/16/12 DH
Updated 2/20/14 DH
Rev. approved CAA 11/4/15
Updated 6-9-21 DH
Updated 8-18-21 BV
Updated 09-27-2023 RLS