

# Engineering Design

Engineering Design teaches students to use several types of CAD programs and other computer based programs to design and create mechanical part devices.

Engineering Design is a process whereby clients contact a design company to work on a device or part of a device and create it to specifications. Usually this entails the design company consulting with the company in need of the part. Once you fully understand what you are being asked to make, its time to start doing sketches and diagrams, either by hand or computer. Usually, the design company will make a mock-up model of what the finished product would look like out a material such as wood, clay or plastic. If both sides are pleased with the process, then the creation continues to fruition. Increasingly the design firms and the company needing a product are working together the entire step of the way to make sure that the result is up to specifications.

Engineering Design contracts are usually sought by various industries such as automotive, toy, transportation vehicles, appliances, medical equipment, furniture, tools, housewares and construction.

## Skills and Competencies

Creativity and technical knowledge are key to thriving in the Engineering Design workplace. Many aspects of this profession, especially technology will be rapidly changing. You will need to keep up on the latest literature and techniques within your field.

As in most other fields, strong interpersonal communication and organizational skills are a must for any professional.

## Course Work

This degree includes the following courses as part of the program requirements, and specific major requirements along with general education courses and graduation requirements.

### General Education

- EN111 College Composition I (4 cr.)
- EN211 College Composition II (4 cr.)
- MA115 Precalculus (4 cr.)
- PH201 College Physics I (5 cr.)

### Core

- DD100 Technical Drafting/Intro to CAD (4 cr.)
- DD103 Geometric Dimensioning/Tolerancing (2 cr.)
- DD105 Schematic/Diagram Drafting (2 cr.)
- DD202 Product Development and Design (4 cr.)
- DD203 Industrial Drawing and Design (4 cr.)
- MF233 Numerical Control (4 cr.)

### Other required courses

- AD111 Human Centered Design: Foundations (4 cr.)
- ET110 Introduction to Electricity (4 cr.)
- IT010 Exit Seminar (0 cr.)
- IT180 Introduction to Fluid Power (3 cr.)
- MET211 Mechanics-Statics (4 cr.)
- MET213 Materials Science I (3 cr.)
- MF134 Manufacturing Process (4 cr.)

## Career Development

You should begin the resume-building process as soon as you can. The Academic and Career Advice Center can assist you with career planning, while Career Services will help you fine tune your resume and look for jobs related to your field. In the meantime, the more hands-on experience you have, the better the chances are that you will find a job. Becoming involved in a professional related internship is a way to develop your professional skills and gain experience. Your academic course work is important as well, so be sure to maintain a high grade point average.

## Additional Considerations

Engineering Design is an Associate of Applied Sciences requiring 60 credits to complete under the current bulletin. This translates to about four semesters of 16 credits per semester. These credits could be used towards a four year bachelor's degree from the Engineering Technology Department, meaning you can get a degree in Engineering design and come back for a further degree. Students with Engineering Design degrees often progress to either a Mechanical Engineering Technology or Industrial Technologies degree.

## Job Outlook

Engineering Design is expected to grow at a 6% average rate for the coming years. Average earnings range above \$50,000. Competition maybe keen for jobs and those with more experience and advanced degrees look to do quite well.

# Potential Careers

NMU's Engineering Design Program prepares students for employment in the following careers:

- CAD Design Engineer
- Design Engineer
- Design Verification Engineer
- Hardware Design
- Mechanical Design Engineer
- Naval Architect
- Power Supply Design Engineer
- Project Architect
- Structure and Payload Design
- Technical Architect
- Tool Design Engineer

# Additional Resources and Information

For Career Planning and Opportunities:  
Academic & Career Advisement Center  
3302.1 C.B. Hedgcock  
906-227-2971  
103 Jacobetti Complex  
906-227-2283  
[www.nmu.edu/acac](http://www.nmu.edu/acac)

Department of Engineering Technologies  
123 Jacobetti Complex  
906-227-2141  
[www.nmu.edu/engineering](http://www.nmu.edu/engineering)

For Job Search, Resume and Career Information:  
Career Services  
3302.3 C.B. Hedgcock  
906-227-2800  
[www.nmu.edu/careers](http://www.nmu.edu/careers)

For Information about NMU Student Organizations Associated with this Major Contact:  
Center for Student Enrichment  
1206 University Center  
906-227-2439  
[www.nmu.edu/cse](http://www.nmu.edu/cse)

Internet Resource Links:  
[www.careers.org](http://www.careers.org)  
[www.bls.gov](http://www.bls.gov)

For Career Information with National Organizations:  
[www.nspe.org](http://www.nspe.org) -National Society of Engineers  
[www.wfeo.org](http://www.wfeo.org) -World Federations of Engineering Organizations



**NORTHERN MICHIGAN  
UNIVERSITY**

The Academic & Career Advisement Center  
2022



What to do with  
a major in...

## Engineering Design

Associate's Degree

