

# Engineering, College of (ENGR)

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<http://www.engr.uark.edu/>

## Degrees Conferred:

M.S.E., Ph.D. (ENGR)

The College of Engineering offers instruction in engineering leading to the degrees of Master of Science in Biological, Biomedical, Chemical, Civil, Computer, Electrical, Environmental, Industrial, and Mechanical Engineering as well as a Master of Science in Operations Management and a Doctor of Philosophy in Engineering and Computer Science. Descriptions and requirements of these degree programs may be found under separate departmental headings. In addition, a Master of Science in Engineering (M.S.E.) degree is available for students who wish to take a broader range of courses than is usually permitted for the designated degrees listed above.

## General Requirements for the Master of Science Degrees in the College of Engineering

In addition to the requirements of the Graduate School, the following requirements have been established by the College of Engineering for all Master of Science graduates:

1. Complete a minimum of 30 semester hours of graduate-level credit beyond the bachelor's degree that includes 50 percent graduate-level credit in the field of study.
2. Earn a minimum cumulative grade-point average of 3.00 on all graduate courses attempted.

Departments may set higher grade standards and additional requirements.

**Master of Science in Engineering Degree:** The M.S.E. degree is available as a distance-delivered option. Courses are offered in five 8-week terms each year. A Master of Science in Engineering (M.S.E.) degree is available for students who wish to take a broader range of courses than is usually permitted for the designated degrees listed in the previous paragraph.

### Prerequisites to the Master of Science in Engineering Degree:

Students with a B.S. degree from any engineering program accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology are normally accepted into the M.S.E. program.

### Requirements for the Master of Science in Engineering Degree:

The general minimum requirements of the Graduate School for Master of Science degrees must be met. The graduate faculty of the College of Engineering has established the following specific requirements for the Master of Science in Engineering degree:

1. Complete a minimum of 30 semester hours of graduate-level credit beyond the bachelor's degree. Up to 6 semester hours of project research can be used to satisfy the required 30 semester hours of credit by writing a project paper approved by the departmental faculty.
2. Course requirements:
  - a. One 3-hour course from each of the following four areas for a total of 12 hours: mathematics, computer applications, technical communications, and engineering management;
  - b. Three 3-hour courses from a single engineering emphasis with the approval of the advisory committee;
  - c. Nine additional graduate-level hours from any area with the approval of the advisory committee, with:
  - d. A maximum of four 4000-level graduate courses, with the remainder at the 5000 level or higher; and
  - e. A maximum of four Operations Management (OMGT) courses

3. Earn a minimum cumulative grade-point average of 3.00 on all graduate courses attempted. Minimum grades of "B" are required on 80 percent of the graduate hours taken for credit towards the M.S.E. degree.
4. Satisfactorily complete a comprehensive examination.

The program of study for each candidate will be determined by conference with the major professor and with advice from the candidate's graduate committee.

Students should also be aware of Graduate School requirements with regard to master's degrees (<http://catalog.uark.edu/graduatecatalog/degreerequirements/#mastersdegreestext>).

## General Requirements for the Doctor of Philosophy Degree in Engineering

The program of study leading to the degree of Doctor of Philosophy in Engineering will vary, depending upon the major field of study and the objective of the prospective candidate. Program requirements balance credit hours for required coursework, research, and dissertation preparation.

In addition to the requirements of the Graduate School, the following requirements have been established by the College of Engineering for all doctoral graduates:

1. A minimum of 72 semester hours of graduate-level credit beyond the bachelor's degree.
2. A minimum of 42 semester hours of graduate-level credit beyond the master's degree.

Departments may set higher grade standards and additional requirements. (See department requirements.) Students from non-engineering backgrounds typically will be required to take selected fundamental engineering courses.

Major areas of study for the Doctor of Philosophy Degree in Engineering are as follows:

- Biological Engineering
- Biomedical Engineering
- Chemical Engineering
- Civil Engineering
- Computer Engineering
- Electrical Engineering
- Industrial Engineering
- Mechanical Engineering

The Graduate School also offers a Doctor of Philosophy in Computer Science (<http://catalog.uark.edu/graduatecatalog/programsofstudy/computerscienceandcomputerengineeringcsce>).

Students should also be aware of Graduate School requirements with regard to doctoral degrees (<http://catalog.uark.edu/graduatecatalog/degreerequirements/#phdandedddegreeestext>).

## **Courses**

### **GNEG 5103. Globalization and Innovation (Irregular). 3 Hours.**

Integration of engineering in the globalized business environment. Innovation and integration models. Global survival skills. International organizational value-chain. Conducting business with emerging nations. Case studies; field trips; guest lectures. Experiential learning design component. Taken by students participating in departmental approved study abroad programs. May not earn credit for GNEG 3103 or 4103.

### **GNEG 550V. Master's Research Project (Irregular). 1-3 Hour.**

Required course for MSE students who wish to complete a Master's research project as part of their degree program. Prerequisite: Instructor permission.

### **GNEG 5801. Parallel Cooperative Education (Sp, Su, Fa). 1 Hour.**

Part time supervised experience in industry where students apply focused, discipline specific, classroom and research skills to problems directly related to their area of study in a professional work place setting. May be repeated for up to 3 hours of non-degree credit. Prerequisite: Instructor permission.

### **GNEG 5811. Alternating Cooperative Education (Sp, Su, Fa). 1 Hour.**

Full time supervised experience in industry where students apply focused, discipline specific, classroom and research skills to problems directly related to their area of study in a professional work place setting. May be repeated for up to 3 hours of non-degree credit. Prerequisite: Instructor permission.

### **GNEG 590V. Special Topics (Irregular). 1-4 Hour.**

Consideration of current engineering topics not covered in other courses. Prerequisite: Instructor's consent. May be repeated for up to 4 hours of degree credit.