



DEPARTMENT OF  
HIGHER EDUCATION &  
WORKFORCE DEVELOPMENT

**New Program Report**

**Date Submitted:**

09/16/2019

**Institution**

College of The Ozarks

**Site Information**

**Implementation Date:**

9/16/2019 12:00:00 AM

**Added Site(s):**

**Selected Site(s):**

College of The Ozarks, P.O. Box 17, Point Lookout, MO, 65726-0017

**CIP Information**

**CIP Code:**

140101

**CIP Description:**

A program that generally prepares individuals to apply mathematical and scientific principles to solve a wide variety of practical problems in industry, social organization, public works, and commerce. Includes instruction in undifferentiated and individualized programs in engineering.

**CIP Program Title:**

Engineering, General

**Institution Program Title:**

Engineering

**Degree Level/Type**

**Degree Level:**

Bachelor's Degree

**Degree Type:**

Bachelor of Science

**Options Added:**

**Collaborative Program:**

N

**Mode of Delivery**

**Current Mode of Delivery**

Classroom

**Student Preparation**

**Special Admissions Procedure or Student Qualifications required:**

Masters degree or experience.

**Specific Population Characteristics to be served:**

n/a



# DEPARTMENT OF HIGHER EDUCATION & WORKFORCE DEVELOPMENT

## New Program Report

### Faculty Characteristics

Special Requirements for Assignment of Teaching for this Degree/Certificate:  
None.

Estimate Percentage of Credit Hours that will be assigned to full time faculty:  
90%

Expectations for professional activities, special student contact, teaching/learning innovation:  
Professional development.

### Student Enrollment Projections Year One-Five

Year 1	Full Time: 30	Part Time: 0	
Year 2	Full Time: 40	Part Time: 0	
Year 3	Full Time: 50	Part Time: 0	Number of Graduates: 15
Year 4	Full Time: 50	Part Time: 0	
Year 5	Full Time: 50	Part Time: 0	Number of Graduates: 25

Percentage Statement:  
n/a

### Program Accreditation

Institutional Plans for Accreditation:  
Currently working on professional accreditation.

### Program Structure

Total Credits:  
125

Residency Requirements:  
30 credit hours

General Education Total Credits:  
55

Major Requirements Total Credits:  
86

### Course(s) Added

COURSE NUMBER	CREDITS	COURSE TITLE
ENR 1103	3	Introduction to Engineering

Free Elective Credits:  
0

Internship or other Capstone Experience:  
Capstone I and II

### Assurances

I certify that the program will not unnecessarily duplicate an existing program within the geographically applicable area.



DEPARTMENT OF  
HIGHER EDUCATION &  
WORKFORCE DEVELOPMENT

**New Program Report**

I certify that the program will build upon existing programs and faculty expertise.

I certify that the institution has conducted research on the feasibility of the proposal and it is likely the program will be successful. Institutions' decision to implement a program shall be based upon demand and/or need for the program in terms of meeting present and future needs of the locale, state, and nation based upon societal needs, and/or student needs.

**Contact Information**

First and Last Name:

Email:

Phone:

## College of the Ozarks

## 2019-2020 College Catalog

### Engineering Major, B.S.

#### General Information

##### *Bachelor of Science*

As a multidisciplinary program, students receive instruction in essential engineering topics and applications covering the major branches of engineering. Within the core program, two electives provide an opportunity to further explore an area of interest. Students desiring additional depth in a particular engineering discipline may apply to pursue a concentration, which requires additional work beyond that required for the core B.S. program. The B.S. program prepares graduates to take the Fundamentals of Engineering exam and work in industry or pursue graduate studies in engineering or in complementary fields such as business, law and medicine.

##### College of the Ozarks Engineering Program Student Outcomes:

In order for alumni in the workforce to attain the College of the Ozarks engineering program objectives, the program seeks to produce graduates who possess the following:

1. an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
2. an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors
3. an ability to communicate effectively with a range of audiences
4. an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts
5. an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
6. an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
7. an ability to acquire and apply new knowledge as needed, using appropriate learning strategies
8. an understanding of the fundamentals of creating and sustaining business and mission opportunities

#### Admission to B.S. Program

To apply for admission to the engineering program at College of the Ozarks, students must meet the following general requirements. Note these are minimum requirements and do not guarantee admission to the program.

- Be currently enrolled at College of the Ozarks
- Have and maintain a minimum cumulative GPA of 2.50
- Have completed at least one semester at C of O
- Have successfully completed a minimum of 30 credit hours including:

- ENR 1103 - Introduction to Engineering
  - ENR 1123 - Engineering Computer Modeling with a C (2.0 gpa) or better
  - ENR 2173 - Mechanics I - Statics with a C (2.0 gpa) or better
  - MAT 175 - Calculus I and MAT 205 - Calculus II with a C (2.0 gpa) or better.
- Note: application may be made prior to the completion of these courses, but successful completion is required prior to admission.

- Submit a completed application form to the engineering department office.

#### Graduation

The Bachelor of Science in Engineering degree is granted by College of the Ozarks to those candidates who have completed the credit requirements as described in the engineering curriculum course plan and who have met all degree requirements of College of the Ozarks. A cumulative College of the Ozarks GPA of 2.50 and a cumulative 2.50 GPA for all math, science, and engineering courses taken at College of the Ozarks are required to graduate from College of the Ozarks' engineering program.

Students intending to graduate must complete a graduation check application with the Registrar at least three semesters before they expect to graduate. Students are responsible for assuring their academic record is in order.

#### Concentrations

Through a formal concentration, students may pursue additional depth in an area of engineering beyond that possible through electives in the core B.S. program. Pursuit of a concentration requires prior approval by the engineering department. The formal application includes selecting four electives supporting the concentration area, as well as providing details about the desired internship. The application must be submitted to the engineering department no later than the first day of classes of the semester prior to embarking on the concentration. However, earlier application is advisable to maximize opportunities to schedule courses with limited availability. Further details and application procedures may be obtained from the engineering department. Successful completion of a concentration will be annotated on a graduate's transcript.

#### Engineering Major Requirements: 86 credit hours

##### General Education Courses Specified by Major:

- CHE 114 - General Chemistry I
- ENR 1123 - Engineering Computer Modeling \* (CSC 113 proficiency is not allowed)

##### Required Major Courses: 54 credit hours

- ENR 1103 - Introduction to Engineering \*
- ENR 2173 - Mechanics I - Statics \*
- ENR 2183 - Mechanics II - Dynamics
- ENR 2354 - Circuits and Systems
- ENR 2413 - Mechanics of Materials
- ENR 2903 - Engineering Project Management
- ENR 3113 - Measurement and Control

- [ENR 3203 - Civil Infrastructure](#)
- [ENR 3413 - Materials and Processes](#)
- [ENR 3433 - Thermodynamics and Fluid Systems](#)
- [ENR 3502 - Industrial Engineering Concepts](#)
- [ENR 3513 - Lean and Six Sigma Concepts](#)
- [ENR 3604 - Agricultural Engineering Fundamentals](#)
- [ENR 3703 - Chemical Engineering Fundamentals](#)
- [ENR 4102 - Capstone Design I](#)
- [ENR 4103 - Capstone Design II](#)

**Choose Three 300-400 Level Credits of Technical Electives:**

- Biology (BIO)
- Chemistry (CHE)
- Computer Science (CSC)
- Engineering (ENR)
- Mathematics (MAT)
- EDU 4273 (required for engineering/secondary education majors)

**Choose Three 300-400 Level Credits of Engineering Electives:**

- Engineering (ENR)

**Required Collateral Courses: 32 credit hours**

- [MAT 125 - Calculus I \\*](#)
- [MAT 205 - Calculus II \\*](#)
- [MAT 305 - Calculus III](#)
- [MAT 313 - Differential Equations](#)
- [MAT 333 - Linear Algebra](#)
- [MAT 343 - Probability and Statistics](#)
- [PHY 234 - Physics I: Calculus-based](#)
- [PHY 244 - Physics II: Calculus-based](#)

**Optional Concentration: 15 credit hours**

- [ENR 48V - Engineering Internship](#) (3-6 credit hours) (In an area related to the concentration.)
- Twelve additional 300-400 level credits from courses in areas directly related to the concentration as approved by the department. At least six of the credits must be from engineering (ENR) courses. ENR 48V may not be applied to this requirement.

**Note:**

\* Course requires a grade of C (2.0) or better.

All prerequisite courses require a C- or better.