



DEPARTMENT OF
HIGHER EDUCATION &
WORKFORCE DEVELOPMENT

New Program Report

Date Submitted:

10/17/2023

Institution

Drury University

Site Information

Implementation Date:

8/1/2024 12:00:00 AM

Added Site(s):

Selected Site(s):

Drury University, 900 N. Benton Avenue, Springfield, MO, 65802

CIP Information

CIP Code:

141901

CIP Description:

A program that prepares individuals to apply mathematical and scientific principles to the design, development and operational evaluation of physical systems used in manufacturing and end-product systems used for specific uses, including machine tools, jigs and other manufacturing equipment; stationary power units and appliances; engines; self-propelled vehicles; housings and containers; hydraulic and electric systems for controlling movement; and the integration of computers and remote control with operating systems.

CIP Program Title:

Mechanical Engineering

Institution Program Title:

Mechanical Engineering

Degree Level/Type

Degree Level:

Bachelor's Degree

Degree Type:

Bachelor of Science in Mechanical Engineering

Options Added:

Collaborative Program:

N

Mode of Delivery

Current Mode of Delivery

Classroom

Student Preparation

Special Admissions Procedure or Student Qualifications required:

none



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Specific Population Characteristics to be served:

Fulltime undergraduate students

Faculty Characteristics

Special Requirements for Assignment of Teaching for this Degree/Certificate:

Mechanical engineering faculty will need a terminal degree in engineering. Most will need a terminal degree in mechanical engineering.

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

At least 90% of the mechanical engineering classes will be taught by full time faculty.

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

Faculty will be required to engage in scholarly activities that lead to publication or patents. They will teach the contracted load for a full time faculty member and meet with students outside class at least 8 -10 hours each week.

Student Enrollment Projections Year One-Five

Year 1	Full Time: 12	Part Time: 0	
Year 2	Full Time: 25	Part Time: 0	
Year 3	Full Time: 38	Part Time: 0	Number of Graduates: 0
Year 4	Full Time: 53	Part Time: 0	
Year 5	Full Time: 62	Part Time: 0	Number of Graduates: 37

Percentage Statement:

n/a

Program Accreditation

Institutional Plans for Accreditation:

Drury will seek accreditation from the Accreditation Board for Engineering and Technology (ABET) after graduating the first class of students from this program.

Program Structure

Total Credits:

129

Residency Requirements:

The university requires students to enroll at least their last 30 hours at Drury.

General Education Total Credits:

33

Major Requirements Total Credits:

96

Course(s) Added

COURSE NUMBER	CREDITS	COURSE TITLE
EGRM 325	3	Dynamics
EGRA 124	2	Engineering Applications of MATLAB II



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EGRA 160	2	Introduction to Design
EGRA 465	3	Capstone Design II
EGRM 240	3	Materials and Manufacturing
MATH 235	3	Linear Algebra
EGRA 420	3	Control Systems II
EGRM 420	3	Materials and Machine Component Design
MATH 233	4	Calculus III
EGRA 130	2	Introduction to Microcontrollers
EGRM 220	3	Statics and Mechanics of Materials I
EGRE 205	3	Circuits II
EGRA 200	3	Circuits I
EGRM 320	3	Statics and Mechanics of Materials II
PHYS 211	5	General Physics I
EGRM 430	3	Heat Transfer
MATH 231	4	Calculus I
EGRA 460	3	Capstone Design I
BIOL 172	3	Molecular Biology
EGRE 230	3	Digital Logic and Design with Verilog
PHYS 212	5	General Physics II
CSCI 362	3	Introduction to Machine Learning
EGRA 360	2	Junior Design
EGRA 390	3	Business Short Courses
CSCI 251	4	Introduction to Computer Science
EGRM 350	4	Measurement Systems
EGRA 290	3	Engineering Short Courses
MATH 232	4	Calculus II
EGRE 235	3	Embedded Systems
EGRA 123	1	Engineering Applications of MATLAB I
EGRA 320	3	Control Systems I
CHEM 208	5	Analytical Chemistry
EGRM 330	3	Fluid Mechanics
CHEM 121	4	Introduction to Chemistry
EGRM 230	3	Thermodynamics



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EGRA 140	2	Graphical Communications and Basic Making
MATH 366	3	Differential Equations

Free Elective Credits:

0

Internship or other Capstone Experience:

This program requires two capstone experiences.

Assurances

I certify that the program will not unnecessarily duplicate an existing program of another Missouri institution in accordance with 6 CSR 10-4.010, subsection (9)(C) Submission of Academic Information, Data and New Programs.

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

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Bachelor of Science in Mechanical Engineering

Mechanical Engineering is one of the broadest engineering majors. It focuses on problem solving in analysis, design, and production of mechanical and thermal systems. This enables graduates to tackle the complex technological problems of today and teach themselves the new technologies of tomorrow. Mechanical engineers apply their knowledge in diverse fields: rollercoasters; rocket ships; airplanes; wind turbines; medical devices such as MRI machines, heart valves, artificial hips, and prosthetics; vehicles such as race cars or gas-powered, hybrid, and electric cars; bridges; automation and robotics; power plants; manufacturing; the list is endless. An undergraduate degree in ME can also open the door to entrepreneurship or graduate school in engineering, law, business, and medicine.

Engineering Classes		50 hrs.
EGR 140	Graphical Communications and Basic Making	2 hrs.
EGR 130	Introduction to Microcontrollers	2 hrs.
EGR 123	Engineering Applications of MATLAB I	1.5 hrs.
EGR 124	Engineering Applications of MATLAB II	1.5 hrs.
EGR 160	Introduction to Design	2 hrs.
EGR 200	Circuits I	3 hrs.
EGR 220	Statics and Mechanics of Materials I	3 hrs.
EGR 240	Materials and Manufacturing	3 hrs.
EGR 230	Thermodynamics	3 hrs.
EGR 320	Statics and Mechanics of Materials II	3 hrs.
EGR 325	Dynamics	3 hrs.
EGR 350	Measurement Systems	3 hrs.
EGR 330	Fluid Mechanics	3 hrs.
EGR 360	Junior Design	2 hrs.
EGR 430	Heat Transfer	3 hrs.
EGR 420	Materials and Machine Component Design	3 hrs.
EGR 460	Capstone Design I	3 hrs.
EGR 465	Capstone Design II	3 hrs.
EGR 320	Control Systems I	3 hrs.
Other Required Courses		46-48 hrs.
EGR 290	6 Engineering/Science Short (0.5 hrs.) Courses	3 hrs.
EGR 390	6 Business Short (0.5 hrs.) Courses	3 hrs.
CSCI 251	Introduction to Computer Science	4 hrs.
MATH 231	Calculus I	4 hrs.
MATH 232	Calculus II	4 hrs.
MATH 366	Differential Equations	3 hrs.
MATH 235	Linear Algebra	3 hrs.
MATH 233	Calculus III	4 hrs.

PHYS 211	General Physics I	5 hrs.
PHYS 212	General Physics II	5 hrs.

Choose one of the following chemistry classes (class and lab):

CHEM 121	Introduction to Chemistry	4 hrs.
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Choose one of the following:

EGRA 420	Control Systems II	3 hrs.
EGRE 205	Circuits II	3 hrs.
EGRE 230	Digital Logic and Design with Verilog	3 hrs.
EGRE 235	Embedded Systems	3 hrs.
CSCI 362	Introduction to Machine Learning	3 hrs.
BIOL 172	Molecular Biology	3 hrs.
CHEM 208L	Analytical Chemistry with Laboratory	5 hrs.