2018–19
MECHANICAL ENGINEERING PIPELINE

K–8
FIRST LEGO LEAGUE
FIRST TECH CHALLENGE
LEGO ROBOTICS
DIXIE PREP
RED ROCK MATH CIRCLE

HIGH SCHOOL
ENGINEERING CAMP
CONCURRENT ENROLLMENT
SUCCESS ACADEMY
ACE ACADEMY *
CTE HIGH SCHOOL *

DSU
DIXIE TECH
CERTIFICATE PROGRAM
ASSOCIATE DEGREE
BACHELOR’S DEGREE

*coming soon
MAKER CERTIFICATE
Program courses and requirements based on the FALL 18/19 catalog
12.5 credits

ASSOCIATE OF SCIENCE IN
PRE-ENGINEERING
68.5 credit hours

PRE-ENGINEERING CORE REQUIREMENTS

MAKER CERTIFICATE REQUIREMENTS

MECH 1000/05
Mech. Design & Prototyping and Lab

MECH 1100
Manufacturing Processes

MECH 1150
Prototyping Techniques

MECH 1200/05
Coding and Lab

MECH 2010
Statics

MATH & SCIENCE REQUIREMENTS

MATH 1210
Calculus I

MATH 1220
Calculus II

MATH 2210
Multivariable Calculus

CHEM 1210/15
Principles of Chemistry I and Lab

PHYS 2210/15
Physics/Scientists Engineers I and Lab

Complete one of the following sets:

PHYS 2220/25
Physics/Scientists Engineers II and Lab

CHEM 1220/25
Principles of Chemistry II and Lab

PRE-ENGINEERING ELECTIVES
Complete at least 17 credits from the following:

CHEM 1220/25
Principles of Chemistry II and Lab

CHEM 2310/15
Organic Chemistry I and Lab

CHEM 2320/25
Organic Chemistry II and Lab

MATH 2200
Discrete Mathematics

MATH 2250
Differential Equations and Linear Algebra

MATH 2250/55
Sensors & Actuators and Lab

MATH 2270
Linear Algebra

MECH 2160
Materials Science

MECH 2030
Dynamics

MECH 2210/15
Circuits and Lab

PHYS 2210/25
Physics/Scientists Engineers II and Lab

GENERAL EDUCATION REQUIREMENTS
Complete 9 credits from the following:

GEN ED
English

GEN ED
American Institutions

GEN ED
Life Sciences

GEN ED
Literature/ Humanities

GEN ED
Social & Behavioral Sciences

GRADUATION REQUIREMENTS
1. Complete a minimum of 68.5 college-level credits (1000 and above).
2. Complete at least 20 lower-division credits at DSU for institutional residency.
3. Cumulative GPA 2.0 or higher.
4. Grade C- or higher in all Math and Science Requirements, Pre-Engineering Core Requirements, and Pre-Engineering Elective Requirements.

Indicates Concurrent Enrollment courses that fulfill requirements for the degrees listed. Meet with your high school counselor to learn which classes are offered at your school and to enroll in CE classes.
BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING

Program courses and requirements based on the FALL 18/19 catalog
126 credit hours

### MECHANICAL ENGINEERING CORE REQUIREMENTS

<table>
<thead>
<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>MECH 1000/05</td>
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<td>Materials Science</td>
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<tr>
<td>MECH 2210/15</td>
<td>Circuits and Lab</td>
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<tr>
<td>MECH 2250/55</td>
<td>Sensors &amp; Actuators and Lab</td>
</tr>
<tr>
<td>MECH 3200/50</td>
<td>Systems &amp; Controls and Lab</td>
</tr>
<tr>
<td>MECH 3250/55</td>
<td>Machinery and Lab</td>
</tr>
<tr>
<td>MECH 3300/05</td>
<td>Strength of Materials and Lab</td>
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<tr>
<td>MECH 3600/05</td>
<td>Thermodynamics and Lab</td>
</tr>
<tr>
<td>MECH 3650/55</td>
<td>Heat Transfer and Lab</td>
</tr>
<tr>
<td>MECH 3700/05</td>
<td>Fluid Mechanics and Lab</td>
</tr>
<tr>
<td>MECH 4000</td>
<td>Product Design I</td>
</tr>
<tr>
<td>MECH 4010</td>
<td>Product Design II</td>
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<tr>
<td>ENGL 3010</td>
<td>Writing in the Professions</td>
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### MATH & SCIENCE REQUIREMENTS

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<td>Differential Equations and Linear Algebra</td>
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<tr>
<td>MATH 3500</td>
<td>Numerical Analysis</td>
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### MECHANICAL ENGINEERING TECHNICAL ELECTIVES

Complete 12 credits from the following:

- Any 4000 level MECH excluding MECH 4000, 4010
- Any 4000 level PHYS
- Any 4000 level MATH excluding MATH 4500, 4890, 4900
- Any 4000 level CS excluding CS 4600, 4920, 4990, 4991, 4992
- Any 4000 level CHEM excluding CHEM 4800, 4910
- MATH 3150 Introduction to Partial Differential Equations
- MATH 3400 Probability & Statistics
- CS 3010 Mobile Application Development: Android
- CS 3020 Mobile Application Development: iOS
- MATH 3500 Introduction to Partial Differential Equations
- MATH 3400 Probability & Statistics
- CS 3010 Mobile Application Development: Android
- CS 3020 Mobile Application Development: iOS

### GENERAL EDUCATION REQUIREMENTS

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### GENERAL EDUCATION NOTE: Math, Physical Sciences, Laboratory Sciences, and Exploration

General Education requirements are fulfilled by Mechanical Engineering Core Requirements and Math & Science Requirements.

### GRADUATION REQUIREMENTS

1. Complete a minimum of 126 college-level credits (1000 and above).
2. Complete at least 40 upper-division credits (3000 and above).
3. Complete at least 30 upper-division credits at DSU for institutional residency.
4. Cumulative GPA 2.0 or higher.
5. Grade C- or higher in all Mechanical Engineering Required Courses and Technical Elective Courses.
Mechanical engineering is a broad engineering discipline that covers dynamics & controls, thermo-fluid sciences, design, and solid mechanics and materials science. The breadth in the mechanical engineering curriculum prepares students to succeed in a wide range of industries. Specifically, a bachelor’s degree in mechanical engineering provides employment opportunities in the following industries:

- Mechatronics and Robotics
- Manufacturing
- Renewable Energy Generation
- Aerospace and Automotive Industries
- Oil and Gas Industry
- Biomedical Field

In addition to immediate, well-paying job opportunities, mechanical engineering is a strong undergraduate degree for many post-graduate programs. Beyond graduate studies in engineering, the analysis and problem-solving skills learned in mechanical engineering translate well to business, law, and medical programs.

**CONTACT US**

**CAMPS AND AFTERSCHOOL PROGRAMS**
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**ACE ACADEMY**
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**CTE HIGH SCHOOL**
Director: Dave Gardner  
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**DIXIE TECH**
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**CONCURRENT ENROLLMENT**
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**DSU ENGINEERING PROGRAM**
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*coming soon