Mechanical Engineering

The goal of the baccalaureate degree program is to prepare students to embark upon a professional career in Mechanical Engineering or to begin a graduate study. Graduates will be known for their accomplishments in the early stage of their careers and they should:

- Develop mechanical engineering solutions individually and through interdisciplinary teams within a global and societal context.
- Professionally and ethically engage in technical or business activity through engineering ability, communication skills, and knowledge.
- Continue professional growth through post-graduate education, continuing education, or professional activity.
- Contribute to the Northwest Florida regional economic development.

Mechanical Engineering is one of the largest, broadest, and oldest of the engineering disciplines. It is the engineering discipline that applies the principles of engineering, materials science, thermal sciences, mechanics, mathematics and physics for the design, analysis, manufacturing, and maintenance of mechanical systems. Because of the extremely rapid growth and changes relating to the application of mechanical engineering principles, the curriculum is designed to concentrate on a solid core of foundation courses. Electives are included to permit a student to delve deeply into selected subject matter and to learn other pertinent subjects.

Mechanical Engineers are capable of working in a wide variety of industry sectors, including aerospace, manufacturing, energy, environment, transportation, materials, and structures.

Program Requirements:
Students are required to have a laptop or tablet PC. Students should check with the department for minimum hardware configurations. Please visit our website for more information about our program, including a list of department scholarships and answers to some frequently asked questions.

In addition to the University’s general requirements, students seeking the BSME must meet the requirements listed below.

A minimum course grade of ‘C’ or better is required in certain Engineering courses as well as all math, science, and engineering courses that serve as prerequisites to EGN, EGM, EML, and EEL prefixed courses and labs. See program requirements below for a full set of courses that require a grade of ‘C’ or better.

The mechanical engineering curriculum is designed to yield a set of outcomes. Each upper division course in the program contributes to at least one of these outcomes. A current list of our program outcomes and the courses that map to them can be found here.

All students must complete an exit interview and submit a final copy of their senior design report before graduating.

General Education
In addition to the General Education requirements listed on this page, students must satisfy all additional University requirements, including the Gordon Rule, multicultural, and foreign language requirements. With appropriate planning and coordination with an academic advisor, students may satisfy some of the general University requirements through the General Education curriculum. For a complete listing of general degree requirements, refer to the 'University Requirements' section of this catalog.

General Education Curriculum:

Communication

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<tr>
<th>Course</th>
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<tr>
<td>ENC 1101</td>
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<td>ENC 1102</td>
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Mathematics
Choose one course from Group A and one Additional course from either Group A or Group B

<table>
<thead>
<tr>
<th>Group A</th>
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<tr>
<td>MAC 1105</td>
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<td>MAC 1105C</td>
<td>College Algebra with Lab</td>
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<tr>
<td>MAC 2311</td>
<td>Analytic Geometry and Calculus I</td>
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<td>MGF 1106</td>
<td>Mathematics for Liberal Arts I</td>
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<td>MGF 1107</td>
<td>Mathematics for Liberal Arts II</td>
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<td>STA 2023</td>
<td>Elements of Statistics</td>
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<th>Course</th>
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<tr>
<td>MAC 1114</td>
<td>Trigonometry</td>
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<td>MAC 1140</td>
<td>Precalculus Algebra</td>
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<td>MAC 1147</td>
<td>Precalculus with Trigonometry</td>
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<tr>
<td>MAC 2233</td>
<td>Calculus with Business Applications</td>
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<tr>
<td>MAC 2312</td>
<td>Analytic Geometry and Calculus II</td>
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Social Sciences
Choose one course from Group A and one additional course from either Group A or Group B

<table>
<thead>
<tr>
<th>Group A</th>
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<tr>
<td>AMH 2020</td>
<td>United States since 1877</td>
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<tr>
<td>ANT 2000</td>
<td>Introduction to Anthropology</td>
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<tr>
<td>ECO 2013</td>
<td>Principles of Economics Macro</td>
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<td>POS 2041</td>
<td>American Politics</td>
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<td>PSY 2012</td>
<td>General Psychology</td>
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<td>SYG 2000</td>
<td>Introduction to Sociology</td>
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<th>Course</th>
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<tr>
<td>AMH 2010</td>
<td>United States to 1877</td>
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<tr>
<td>ANT 2100</td>
<td>Introduction to Archaeology</td>
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<td>ANT 2400</td>
<td>Current Cultural Issues</td>
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<td>CCJ 2002</td>
<td>Survey of Crime and Justice</td>
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<td>COM 2023</td>
<td>Death and Communication</td>
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<td>CPO 2002</td>
<td>Comparative Politics</td>
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<td>DEP 2004</td>
<td>Human Development Across the Lifespan</td>
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<td>EUH 1000</td>
<td>Western Perspectives I</td>
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<td>Nations and Regions of the World</td>
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<td>Introduction to Business</td>
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<td>HIS 2050</td>
<td>Explore! History</td>
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<td>IDH 1041</td>
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<td>MMC 2000</td>
<td>Principles of Mass Communication</td>
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<td>PLA 2013</td>
<td>Survey of American Law</td>
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<tr>
<td>SOW 2192</td>
<td>Understanding Relationships in the 21st Century</td>
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### Natural Sciences

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<td>PHY 2048</td>
<td>Algebra-Based Physics I</td>
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<td>PHY 2049</td>
<td>Calculus-Based Physics II</td>
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<td>PHY 2054</td>
<td>Algebra-Based Physics II</td>
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<tr>
<td>PHY 2055</td>
<td>Fundamentals of Ecology</td>
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<tr>
<td>PHY 2056</td>
<td>Anatomy and Physiology II</td>
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<tr>
<td>PHY 2057</td>
<td>Biology II</td>
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<tr>
<td>PHY 2058</td>
<td>Introduction to Oceanography and Marine Biology</td>
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<td>PHY 2059</td>
<td>General Chemistry II</td>
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<td>PHY 2060</td>
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<tr>
<td>PHY 2061</td>
<td>Introduction to Cybersecurity</td>
</tr>
<tr>
<td>PHY 2062</td>
<td>Informatics and Your Health</td>
</tr>
<tr>
<td>PHY 2063</td>
<td>Fundamentals of Microbiology</td>
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<td>PHY 2064</td>
<td>Algebra-Based Physics II</td>
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<td>PHY 2065</td>
<td>Calculus-Based Physics II</td>
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### Humanities

Choose one course from Group A and one additional course from either Group A or Group B.

**Group A**
- ARH 1000: Art Appreciation
- LIT 2000: Introduction to Literature
- MUL 2010: Music Appreciation
- PHI 2010: Introduction to Philosophy
- THE 2000: Theatre Appreciation

**Group B**
- AML 2010: American Literature I
- AML 2020: American Literature II
- AML 2072: Sex, Money, and Power in American Literature
- ARH 2050: Western Survey I: Prehistory to the Medieval Period
- ARH 2051: Western Survey II: Renaissance to Contemporary
- ART 1015C: Exploring Artistic Vision
- ART 2821: The Self, Creativity, Your Career and Visual Culture
- CRW 2001: Introduction to Creative Writing
- ENL 2010: History of English Literature I
- ENL 2020: History of English Literature II
- IDH 1040: Honors Core 1
- LIT 2030: Introduction to Poetry
- MUH 2930: The Music Experience: Special Topics
- PHI 2103: Critical Thinking
- PHI 2603: Ethics in Contemporary Society
- REL 1300: World Religions
- SPC 2608: Basic Communication Skills
- THE 2300: Survey of Dramatic Literature

### Mechanical Engineering

An important component of a liberal education is the study of cultures other than one's own. As such, multiculturalism encompasses the appreciation of the values, expressions, and modes of organization of diverse cultural communities. To further such study, the University of West Florida requires all students pursuing a bachelor's degree to complete at least one course that explores one or more of the dimensions of another culture (language, religion, socio-economic structures, etc.). Students are exempt from this requirement if they have completed an A.A. degree, the general education program at a Florida public institution, or a baccalaureate degree.

The requirement is satisfied by the successful completion of a multicultural course designated on the following list. Several of the selections are General Education courses, and students may enroll in these to meet both the General Education and the multicultural requirements.

**Passed by UWF Faculty Senate on 11/08/2002**

This list is continually updated and students are encouraged to check with their advisors for alternative options.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>AML 2010</td>
<td>American Literature I</td>
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<td>AML 3604</td>
<td>African American Literature</td>
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<td>AML 3624</td>
<td>Black Women Writers</td>
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<td>AML 4015</td>
<td>Topics in Nineteenth-Century American Literature</td>
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<td>ANT 2000</td>
<td>Introduction to Anthropology</td>
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<tr>
<td>ANT 2301</td>
<td>Human Sexuality and Culture</td>
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<td>ANT 3212</td>
<td>Peoples and Cultures of the World</td>
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<td>North American Indians</td>
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<td>ANT 3363</td>
<td>Japanese Culture</td>
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<td>ANT 3403</td>
<td>Cultural Ecology</td>
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<td>ANT 4006</td>
<td>Anthropology of Human Rights</td>
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<td>ANT 4191</td>
<td>Ritual Use of Human Remains</td>
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<td>ARH 2050</td>
<td>Western Survey I: Prehistory to the Medieval Period</td>
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<td>Western Survey II: Renaissance to Contemporary</td>
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<td>ARH 3590</td>
<td>Non-Western Art</td>
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<td>ARH 3606</td>
<td>Native American Art</td>
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<td>ARH 4302</td>
<td>Late Renaissance Art in Italy</td>
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<td>ARH 4305</td>
<td>Early Italian Renaissance Art</td>
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<td>ARH 4412</td>
<td>The Age of Revolution to Romanticism in Europe: 1750-1850</td>
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<td>ARH 4450</td>
<td>Modern Art: 1850-1980</td>
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<td>ARH 4470</td>
<td>Contemporary Art</td>
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<td>ARH 4563</td>
<td>Art of Japan</td>
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<td>ARH 4892</td>
<td>Inscribed Bodies: Concepts of Tattoo and Body Art in World History</td>
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<td>CCJ 3678</td>
<td>Race, Gender, Ethnicity, and Crime</td>
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<td>Gender Communication</td>
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<td>Intercultural Communication</td>
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<td>Politics of Western Europe</td>
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<td>CPO 4303</td>
<td>Politics of Spain, Portugal, and Latin America</td>
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<td>CPO 4792</td>
<td>Geopolitics</td>
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<td>Teaching Diverse Populations</td>
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<td>Introduction to Literary Theory</td>
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<td>EUH 3203</td>
<td>Modern Europe</td>
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<td>EUH 3411</td>
<td>Rome and the Mediterranean World</td>
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<td>EUH 3576</td>
<td>Soviet Union since 1917</td>
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<td>FRE 4955</td>
<td>Supervised Foreign Language Field Experience Abroad</td>
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<td>GEO 3421</td>
<td>Cultural Geography</td>
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<td>GEO 3471</td>
<td>Geography of World Affairs</td>
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<td>LAH 4728</td>
<td>Gender and Sexuality in Latin America from Colonization to Today</td>
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<td>LIT 2000</td>
<td>Introduction to Literature</td>
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<td>LIT 2030</td>
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<td>LIT 3233</td>
<td>Postcolonial Literature</td>
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<td>LIT 4385</td>
<td>Feminist Theory</td>
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<td>MAN 4102</td>
<td>Management of Diversity</td>
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<td>MAR 4156</td>
<td>Seminar in International Marketing</td>
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<tr>
<td>MMC 3743</td>
<td>Communicating Fear: Horror Films and Popular Culture</td>
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<td>MMC 4300</td>
<td>Global Communication</td>
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<td>MUH 2930</td>
<td>The Music Experience: Special Topics</td>
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<td>Music Appreciation</td>
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<tr>
<td>NUR 4615</td>
<td>Community and Public Health Nursing</td>
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<td>Public Health &amp; Community-based Nursing</td>
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<td>PHI 3790</td>
<td>African Philosophy</td>
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<td>PUR 3404</td>
<td>International Public Relations</td>
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<td>PSY 3860</td>
<td>Positive Psychology</td>
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<td>Human Diversity and Social Justice</td>
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<td>Immersive Experiences in Social Work</td>
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<td>SYO 4530</td>
<td>Inequality in America</td>
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**Civic Literacy Requirement**

1. Baccalaureate degree-seeking students initially entering a state university fall semester 2018 and thereafter must demonstrate competency in civic literacy through one of the following options prior to graduation:
   a. Successfully passing either POSIX041 American Government or AMHX020 Introductory Survey Since 1877. Each of the courses must include the following competencies:
      i. Understanding of the basic principles and practices of American democracy and how they are applied in our republican form of government;
      ii. An understanding of the United States Constitution and its application;
      iii. Knowledge of the founding documents and how they have shaped the nature and functions of our institutions of self-government; and
      iv. An understanding of landmark Supreme Court cases, landmark legislation and landmark executive actions and their impact on law and society.

2. Achieving the standard score on one of the following assessments:
**Major-Related**

EGS 3441 Engineering Statistics 3
EGS 1006 Introduction to Engineering 3, +, c 1

Major Hours 76

1 Mechanical Engineering Elective restrictions: Any 3000 level or higher EML, EGM, EEL, EEE course, as well as other courses (which must be preapproved by your advisor). At least 2 courses must be in either Thermal or Mechanical systems.

2 Note that EGN 4950 Capstone Design I and EGN 4952L Capstone Design II is the senior design project. This final project is the culmination of the engineering education. As such, this sequence of courses should be taken in the last 2 semesters of a student’s program. Seniors must see their academic advisor in order to register for them.

**Mechanical Engineering Minor**

The Minor in Mechanical Engineering provides an opportunity for students majoring in other areas to take a limited number of mechanical engineering courses to complement their majors. The Minor in Mechanical Engineering is open to all UWF students with the exception of mechanical engineering majors. Students applying for the minor must have a declared major. Students may not take a course and its prerequisite during the same semester.

Students seeking the Minor in Mechanical Engineering must have a minimum course grade of "C" or better in EML 3022 Computer Aided Design and Modeling, EGM 2500 Engineering Mechanics-Statics, EGN 3365 Engineering Materials, and EML 3011 Mechanics of Materials.

The courses in the minor require MAC 2311 Analytic Geometry and Calculus I, CHM 2045 General Chemistry I, and PHY 2048 Calculus-Based Physics I as prerequisites with a minimum grade of ‘C’. Non-engineering majors may substitute PHY 2053 Algebra-Based Physics I for PHY 2048 Calculus-Based Physics I to fulfill the prerequisite for EGM 2500 Engineering Mechanics-Statics.

EML 3022 Computer Aided Design and Modeling 3
EGM 2500 Engineering Mechanics-Statics 3
EGN 3365 Engineering Materials 3
EML 3011 Mechanics of Materials 3
EML 3500 Machine Design 3

Total Hours 15