# 2010-2011 ENGINEERING TECHNOLOGY DEGREE PLAN

**FALL SEMESTER**

**FRESHMAN YEAR**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ENGL 1010</td>
<td>3</td>
</tr>
<tr>
<td>MATH 1730</td>
<td>4</td>
</tr>
<tr>
<td>TECH 1711</td>
<td>3</td>
</tr>
<tr>
<td>TECH 1010</td>
<td>3</td>
</tr>
<tr>
<td>TECH 1411</td>
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| Total       | 14      |

**SPRING SEMESTER**

<table>
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<tbody>
<tr>
<td>ENGL 1020</td>
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<tr>
<td>MATH 1910</td>
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<tr>
<td>TECH 1211</td>
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</tr>
<tr>
<td>TECH 1521</td>
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<td>TECH 1811</td>
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| Total       | 16      |

**SOPHOMORE YEAR**

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<tr>
<td>ENGL Literature*</td>
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<td>PHYS 2010</td>
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<td>PHYS 2011</td>
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<tr>
<td>TECH 2822</td>
<td>4</td>
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<tr>
<td>TECH 2821</td>
<td>3</td>
</tr>
<tr>
<td>History*</td>
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| Total       | 17      |

| TECH Elective** | 3       |
| Total         | 18      |

**JUNIOR YEAR**

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<tr>
<td>ENGL 3603</td>
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<tr>
<td>Social Science*</td>
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<tr>
<td>TECH Elective**</td>
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<tr>
<td>History*</td>
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</tr>
<tr>
<td>TECH Elective**</td>
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</table>

| Total       | 15-16   |

| TECH Elective** | 3       |
| TECH Elective** | 3       |
| TECH Elective** | 3       |

| Total       | 18      |

**SENIOR YEAR**

<table>
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<tr>
<td>Humanities*</td>
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| Total       | 15-16   |

**Summary of Graduation Requirements:**

1. 60 semester hours at a senior (4-year) institution
2. 30 of the final 60 semester hours must be taken as upper division courses in the Herff College of Engineering.
3. Cumulative U of M GPA 2.00 or better required.
4. Courses designated with a single asterisk (*) must satisfy the General Education Requirements as described in the 2010-2011 U of M Undergraduate Catalog (see the back side of this sheet).
5. A grade of C- or better is required in each course designated with a double asterisk (**).
6. A grade of C- or better is required in each course designated with a triple asterisk (***), and the ten (10) courses noted with a triple asterisk (***), must have a combined GPA of 2.5.
7. Complete minimum of TWO Technical Specialty elective sequences to be selected in consultation with faculty advisor.
8. All students are required to file an intention to graduate during the semester preceding the semester of graduation. Deadlines are published in the academic calendar. It is the responsibility of the student to ensure that this deadline is met.

**COMMENTS:**
## GENERAL EDUCATION and BSET REQUIREMENTS

### Communication
- ENGL 1010 English Composition
- ENGL 1020 English Composition and Analysis
- COMM 2381 Oral Communication and Rhetoric
- ENGL 3603 Engineering Communications

### Humanities and Fine Arts

**Select One of the Following:**
- ENGL 2201 Literary Heritage
- ENGL 2202 Literary Heritage: African-American Emphasis

**Plus Two (2) of the Following:**
- ART 1030 Introduction to Art
- ARTH 2101 World Art I
- ARTH 2102 World Art II
- CLAS 2481 Mythology
- COMM 1851 Introduction to Film
- DANC 1151 Introduction to Dance
- JDST 2850 Religions of Abraham: Judaism, Christianity, Islam
- MUS 1030 Music Appreciation
- MUS 1040 Music in America
- PHIL 1101 Classical Issues in Philosophy
- PHIL 1102 Values and the Modern World
- POLS 1101 Introduction to Ancient Political Thought
- POLS 1102 Introduction to Modern Political Thought
- RLGN 1100 Introduction to Religion
- THEA 1030 Introduction to Theatre
- UNIV 3580 Hebrew and Greek Legacy
- UNIV 3581 Faith, Reason, and Imagination

### Social and Behavioral Sciences

**Select Two of the Following:**
- ANTH 1100 Human Origins and Variations
- ANTH 1200 Cultural Anthropology
- CSED 2101 The Family in Global Perspective
- ECON 2110 Introduction to Macroeconomics
- ECON 2120 Introduction to Microeconomics
- ESCI 1301 Survey of World Regions
- ESCI 1401 Introduction to Cultural Geography
- POLS 1100 American Government
- POLS 1301 Governments of the World
- POLS 1301 International Relations
- PSYC 1200 General Psychology
- PSYC 3510 Deviance: Its role in History and Culture
- SOCI 1111 An Introduction to Sociology
- SOCI 2100 Sociology of International Development
- UNIV 2304 Gender and Society

### History

**Select Two of the Following:**
- ANTH 3282 Cultural History of American Communities
- HIST 1110 Development of World Civilization I
- HIST 1120 Development of World Civilization II
- HIST 2011 The United States to 1877
- HIST 2020 The United States since 1877
- HIST 2300 History of Tennessee
- HIST 3863 Social & Intellectual History of the United States
- HIST 3881 African-American History
- HIST 4851 History of Women in America
- POLS 4212 Constitutional Law
- POLS 4405 Origin and Development of American Political Thought
- SOCI 3422 Racial and Ethnic Minorities

*Students who have not completed one year of American History in high school must complete 6 credit hours of American History or 3 credit hours of American History plus 3 credit hours of Tennessee History in order to satisfy the History General Education requirement.*

### Natural Sciences
- CHEM 1010/1011 Chemistry of Materials w/Lab
- PHYS 2010/2011 General Physics I / Trigonometry w/Lab
- PHYS 2020/2021 General Physics II / Trigonometry w/Lab

### Mathematics
- MATH 1730 College Algebra and Trigonometry
- MATH 1910 Calculus I
Bachelor of Science in Engineering Technology
Technical Specialty Course Sequences

The BSET program requires 31-33 semester hours of technical electives. Complete a minimum of two (2) technical specialty elective course sequences selected from the list below:

**Automation & Control Systems (13 hrs):**
- TECH 2831 (3) Advanced Solid-State Technology & Lab
- TECH 3821 (3) Industrial Electronics & Lab
- TECH 3822 (4) Programmable Logic Controllers & Lab  
  TECH 3841 (3) Electrical Power and Motor Control & Lab *OR*
  TECH 4474 (3) Automation and Robotics & Lab *OR*
- TECH 4823 (3) Advanced Prog. Logic Controllers & Lab

**Electronic Communication Systems (13 hrs):**
- TECH 2831 (3) Advanced Solid-State Technology & Lab
- TECH 3811 (3) Electronic Communications & Lab
- TECH 3812 (3) Advanced Electronic Communications
- TECH 4821 (4) Microwave Technology & Lab

**Mechanical Systems Design (15 hrs):**
- TECH 3401 (3) Strength of Materials
- TECH 3421 (3) Manufacturing Processes II & Lab
- TECH 3573 (3) Dynamics & Design for Automation
- TECH 4472 (3) Computer Aided Drafting & Lab
- TECH 4571 (3) Tool Design & Lab

**Microprocessor Systems (15 hrs):**
- TECH 2831 (3) Advanced Solid-State Technology & Lab
- TECH 3232 (4) Digital Technology & Lab
- TECH 3233 (4) Microprocessor Technology & Lab
- TECH 4234 (4) Microprocessor Interfacing & Lab

**Operations Strategy & Lean Principles (9 hrs):**
- TECH 4460 (3) Work Design/Improvement/Measurement
- TECH 4464 (3) Production Control Systems
- TECH 4466 (3) Facility Design

**Product Realization (15 hrs):**
- TECH 3401 (3) Strength of Materials
- TECH 3421 (3) Manufacturing Processes II & Lab
- TECH 4472 (3) Computer Aided Drafting & Lab
- TECH 4474 (3) Automation and Robotics & Lab
- TECH 4476 (3) Computer Aided Manufacturing & Lab

**Software Design (14 hrs):**
- TECH 2251 (3) Advanced Programming Technology
- TECH 2261 (3) Data Structures
- TECH 4262 (4) Modern Programming & Lab
- TECH 4263 (4) Server Application Technology & Lab

**Systems Modeling (19 hrs):**
- TECH 2261 (3) Data Structures
- TECH 3232 (4) Digital Technology & Lab
- TECH 4262 (4) Modern Programming & Lab
- TECH 4272 (4) Operating Systems & Lab
- TECH 4281 (4) Computer Network Tech & Lab

**Web Programming (14 hrs):**
- TECH 4241 (3) Internet Technology
- TECH 4242 (3) Client Application Technology
- TECH 4262 (4) Modern Programming
- TECH 4263 (4) Server Application Technology & Lab