

## SCHOOL OF BUSINESS AND TECHNOLOGY DEPARTMENT OF ENGINEERING TECHNOLOGY

### FACULTY

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<https://www.swosu.edu/academics/academic-departments/engineering-technology/index.php>

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### GENERAL INFORMATION

Technology curricula allows for a variety of exciting opportunities in the areas of Engineering Technology. The Manufacturing Engineering Technology option is currently accredited by the Engineering Technology Accreditation Commission of ABET, [www.abet.org](http://www.abet.org), 415 North Charles Street, Baltimore, MD 21201 – Telephone: (410) 347-7700. Applied Engineering Management is currently accredited by the Association of Technology, Management, and Applied Engineering (ATMAE), [www.atmae.org](http://www.atmae.org), 701 Exposition Place, Suite 206, Raleigh, NC 27615 – Telephone: 919-635-8335. Each major is capped by a research project or realistic internship experience to facilitate the transition from school to the actual job scene.

Career opportunities are numerous in all technology fields and command competitive salaries. Examples of recent graduate placements are manufacturing engineering technologists, quality assurance managers, plant and production supervisors, production analysts, planners and schedulers, and estimators.

Within the Department of Engineering Technology there are two student organizations which promote professional development and social activities. These include student chapters of the Society of Manufacturing Engineers (SME) and the Society of Women Engineers (SWE). The student organizations meet on a regular basis and participate in manufacturing facility tours, community out-reach, campus activities, and educational conferences.

Several years after graduation, Engineering Technology graduates from the Everett Dobson School of Business and Technology will:

1. Be employed in a field where they are able to utilize their technical knowledge and skills.
2. Be able to communicate effectively and professionally in multiple ways and formats, such as oral, written and graphical.
3. Possess the ability to identify and solve basic problems and formulate strategies using critical thinking to improve technical and/or management processes.
4. Collaborate effectively in a diverse cross-disciplined team environment using interpersonal, technical, and leadership skills.
5. Continue to grow as a professional by remaining current in their field and aware of new technologies through job experience, continuous learning, and or professional organizations.
6. Be a good global citizen who embraces ethical, social, and environmental responsibility.

### PROGRAMS OF STUDY

**Majors:** B.S. Engineering Technology

- Electronics Engineering Tech. Option
- Environmental Engineering Tech. Option
- Manufacturing Engineering Tech. Option

B.S. Applied Engineering Management

- Computer Electronics Technology Option
- Manufacturing Technology Option

Certificate in Energy Technology

**Minors:** Computer Technology  
Electronics  
General Technology

For more information visit our web site at:  
<https://www.swosu.edu/academics/academic-departments/engineering-technology/index.php>

## BACHELOR OF SCIENCE IN ENGINEERING TECHNOLOGY (ENGTE.BS)

### GENERAL EDUCATION (Min. 40 hours)

**Bolded courses are required. *Italicized courses are recommended.***

<b>Communication</b> .....	<b>9</b>
<b>ENGL 1113 English Composition I</b>	
<b>ENGL 1213 English Composition II</b>	
COMM 1313 Introduction to Public Speaking OR	
<b>TECH 3143 Technical Presentations</b>	
<b>Quantitative Reasoning</b> .....	<b>3</b>
<i>Select one course.</i>	
MATH 1143 Mathematical Concepts	
MATH 1153 Mathematical Applications	
MATH 1193 Elementary Statistics	
MATH 1313 Functions and Modeling	
<b>MATH 1513 College Algebra</b>	
or a higher numbered math course	
<b>U. S. History</b> .....	<b>3</b>
<i>Select one course.</i>	
HIST 1043 U.S. History to 1877	
HIST 1053 U.S. History since 1877	
<b>American Government</b> .....	<b>3</b>
<b>POLSC 1103 American Government &amp; Politics</b>	
<b>Science</b> .....	<b>8</b>
<i>Select one course from Life Science and one course from Physical Science. One Science course must be a lab science.</i>	
<b>Life Science</b> .....	<b>3-4</b>
<b>BIOL 1004 Biological Concepts w/Lab</b>	
BIOL 1013 Current Issues in Biology	
BIOL 1054 Principles of Biology I w/Lab	
<b>Physical Science</b> .....	<b>3-4</b>
ASTRO 1904 Astronomy	
<b>CHEM 1004 General Chemistry w/Lab</b>	
GEOL 1934 Physical Geology w/Lab	
PHY 1044 Basic Physics I w/Lab	
PHY 1063 General Physics (or a higher numbered chemistry or physics course)	
SCI 1501 Concepts of Physical Science Lab	
SCI 1513 Conc of Phy Science (can be taken w/wo lab)	
<b>Humanities and Social Science</b> .....	<b>12</b>
<i>Select one course from each sub-category and one additional course from any subcategory below.</i>	
<b>Humanities</b> .....	<b>3</b>
GEOG 1103 World Cultural Geography	
HIST 1033 World History	
HUM 1103 Introduction to Humanities	
<b>Fine Arts</b> .....	<b>3</b>
ART 1223 Art Survey	
COMM 1263 Introduction to Theatre	
LIT 2333 Introduction to Film	
LIT 2413 Introduction to Literature	
MUSIC 1013 Introduction to Music I	
MUSIC 1103 Music and Culture (Music majors only)	
MUSIC 1123 History of Rock-n-Roll	
PHILO 1453 Introduction to Philosophy	
<b>Social and Human Sciences</b> .....	<b>3</b>
ASL 2163 American Sign Language I	
ECONO 2263 Intro to Macroeconomics	
ECONO 2363 Intro to Microeconomics	
ENTRP 1123 Intro to Business	
FINAN 2113 Personal Financial Planning	
ITAL 1004 Elementary Italian I	
KINES 1133 Wellness Conc & Exercise Applications	
LATIN 1054 Elementary Latin I (or higher number)	
PSYCH 1003 General Psychology	
SOCIO 1003 Introduction to Sociology	
SPAN 1054 Elementary Spanish I (or higher number)	
<b>TECH 1223 Technology and Society</b>	
<b>Computer Proficiency</b> .....	<b>3</b>
<b>COMSC 1433 Visual Basic Programming</b>	

### ENGINEERING TECHNOLOGY MAJOR/MINOR

The Engineering Technology major/minor includes 48 hours of core requirements, a selected technical specialty, and electives approved by the department to total a minimum of 121-122 hours. The Manufacturing Engineering Technology option is accredited by the Engineering Technology Accreditation Commission of ABET, [www.abet.org](http://www.abet.org), 415 North Charles Street, Baltimore, MD 21201 - Telephone: (410) 347-7700.

<b>Core Requirements</b> .....	<b>48</b>
MATH 1613 College Trigonometry	
MATH 2823 Applied Calculus	
MATH 3413 Statistical Methods	
<b>OR ECONO 2463 Business Statistics</b>	
MFET 4020 Prof Certification Requirements	
PHY 1044 Basic Physics I w/Lab	
TECH 1101 Introduction to Technology	
TECH 1713 Basic Electrical Science	
TECH 2213 2D CAD	
TECH 2413 Non-Metallic Materials & Processes	
TECH 2513 Fabrication Processes I	
TECH 3113 Industrial Safety	
TECH 3463 Manufacturing Operations I	
TECH 3613 Power Systems	
TECH 4264 3D CAD	
TECH 4373 Economic Decision Analysis	
TECH 4433 Quality Control	
TECH 4493 Manufacturing Operations II	

**Majors must select one option from the following technical areas:**

<b>Computer Electronics Engineering Technology Option</b> .....	<b>33</b>
<b>Electronics Requirements</b> .....	<b>27</b>
MFET 3433 Automation and Control Systems	
TECH 2713 Fundamental Electronics	
TECH 2813 Digital Devices	
TECH 3123 Excel for Engineers & Technologists	
TECH 3823 Industrial Electronics	
TECH 3883 Principles of Electronic Communication	
TECH 4223 Electronics Capstone	
TECH 4833 Microprocessors & Embedded Controls	
TECH 4853 Programmable Logic Controls	
<b>Computer Science</b> .....	<b>6</b>
COMSC 1033 Computer Science I	
COMSC 1053 Computer Science II	

<b>Environmental Engineering Technology Option</b>	
<b>Environmental Requirements</b> .....	<b>32</b>
BIOL 4355 Microbiology	
CHEM 1203 General Chemistry I	
CHEM 1252 General Chemistry I Lab	
CHEM 1303 General Chemistry II	
CHEM 1352 General Chemistry II Lab	
CHEM 3013 Organic Chemistry I	
CHEM 4254 Industrial Chem & Environ Reg	
<b>OR CHEM 3244 Environmental Chemistry</b>	
GEOL 1934 Physical Geology	
TECH 3173 Environmental Regulations	
TECH 3413 Production Processes	

<b>Manufacturing Engineering Technology Option</b>	
<b>Manufacturing Requirements</b> .....	<b>32</b>
MFET 3183 Statics & Strengths	
MFET 3433 Automation and Control Systems	
MFET 4443 Material Handling/Facility Planning	
MFET 4753 Senior Capstone	
TECH 2713 Fundamental Electronics	
TECH 3413 Production Processes	
TECH 3513 Materials Testing & Analysis	

*(Continued on next page)*

TECH	3523	Fabrication Processes II
TECH	4454	Computer Aided Manuf (CAM)
TECH	4514	Machine Tool Processes

**TOTAL HOURS.....121-122**

Engineering Technology students apply engineering concepts and emphasize industrial production methods. Specific areas include:

1. Engineering Science
2. Computer Applications/Automation
3. Operations Management
4. Manufacturing Processes
5. Product Design
6. Environmental Health and Safety

**Program Educational Objectives**

Several years after graduation, Engineering Technology graduates with option in Manufacturing Engineering Technology will:

1. Be employed in a field where they are able to utilize their technical knowledge and skills.
2. Be able to communicate effectively and professionally in multiple ways and formats, such as oral, written and graphical.
3. Possess the ability to identify and solve basic problems and formulate strategies using critical thinking to improve technical and/or management processes.
4. Collaborate effectively in a diverse cross-disciplined team environment using interpersonal, technical, and leadership skills.
5. Continue to grow as a professional by remaining current in their field and aware of new technologies through job experience, continuous learning, and/or professional organizations.
6. Be a good global citizen who embraces ethical, social, and environmental responsibility.

**REGULATIONS PERTAINING TO GRADUATION**

Minimum credit hours for graduation.....	121-122
Minimum credit hours in the liberal arts & sciences.....	55
Minimum credit hours in upper-division (3000/4000 courses).....	40
Minimum credit hours (3000/4000 courses) in major completed at SWOSU.....	8
Minimum credit hours at SWOSU (15 of the last 30).....	30
Minimum Grade Point Average in all coursework.....	2.00
Minimum Grade Point Average in major.....	2.00

**Engineering Technology (ENGTE.BS)  
Computer Electronics Engineering Technology Option  
Suggested Course Sequence**

**FIRST YEAR**

FIRST SEMESTER	SECOND SEMESTER
1051 SWOSUConnect * (1) 1101 Introduction to Technology (1) 1113 English Composition I (3) 1223 Technology and Society (3) 1513 College Algebra (3) Humanities and Social Sciences Course (3)	1213 English Composition II (3) 1433 Visual Basic Programming (3) 1613 College Trigonometry (3) 1713 Basic Electrical Science (3) Humanities and Social Sciences Course (3)
Total (14)	Total (15)

**SECOND YEAR**

FIRST SEMESTER	SECOND SEMESTER
1004 Biological Concepts (4) 1033 Computer Science I (3) 2713 Fundamental Electronics (3) 2823 Applied Calculus (3) 4833 Microprocessors and Embedded Controls <b>OR</b> 3823 Industrial Electronics (3)	1004 General Chemistry (4) 1053 Computer Science II (3) 2413 Non-Metallic Materials and Processes (3) 2513 Fabrication Processes I (3) 3883 Principles of Electronic Communications (3)
Total (16)	Total (16)

**THIRD YEAR**

FIRST SEMESTER	SECOND SEMESTER
1044 Basic Physics I (4) 2813 Digital Devices (3) 3433 Automation & Control Systems (3) 3463 Manufacturing Operations I (3) 3823 Industrial Electronics <b>OR</b> 4833 Microprocessors & Embedded Controls (3)	1043 <b>OR</b> 1053 U.S. History (3) 3143 Technical Presentations (3) 3613 Power Systems (3) 4493 Manufacturing Operations II (3) Humanities & Social Sciences Course (3)
Total (16)	Total (15)

**FOURTH YEAR**

FIRST SEMESTER	SECOND SEMESTER
1103 American Government and Politics (3) 2213 2D CAD (3) 2463 Business Statistics <b>OR</b> 3413 Statistical Methods (3) 3123 Excel for Engineers & Technologists (3) 4433 Quality Control (3)	3113 Industrial Safety (3) 4020 Professional Certification Requirements (0) 4223 Electronics Capstone (3) 4264 3D CAD (4) 4373 Economic Decision Analysis (3) 4853 Programmable Logic Controls (3)
Total (15)	Total (16)

\* First time entering SWOSU students need to take 1051 SWOSUConnect.

\*\* If applicable. See English Proficiency Program under the General Academic Information Section

**Engineering Technology (ENGTE.BS)  
Environmental Engineering Technology Option  
Suggested Course Sequence**

**FIRST YEAR**

FIRST SEMESTER	SECOND SEMESTER
1051 SWOSUConnect* (1) 1101 Introduction to Technology (1) 1113 English Composition I (3) 1223 Technology & Society (3) 1433 Visual Basic Programming (3) 1513 College Algebra (3)	1004 Biological Concepts (4) 1004 General Chemistry (4) 1103 American Government and Politics (3) 1213 English Composition II (3) 1613 College Trigonometry (3)
Total (14)	Total (17)

**SECOND YEAR**

FIRST SEMESTER	SECOND SEMESTER
1043 <b>OR</b> 1053 US History (3) 1044 Basic Physics I (4) 2213 2D CAD (3) 2413 Non-Metallic Materials and Processes (3) 2823 Applied Calculus (3)	1203 General Chemistry I (3) 1252 General Chemistry I Lab (2) 1713 Basic Electrical Science (3) 2513 Fabrication Processes I (3) 4264 3D CAD (4)
Total (16)	Total (15)

**THIRD YEAR**

FIRST SEMESTER	SECOND SEMESTER
1303 General Chemistry II (3) 1352 General Chemistry II Lab (2) 2463 Business Statistics <b>OR</b> 3413 Statistical Methods (3) 3463 Manufacturing Operations I (3) Humanities & Social Sciences Course (3) Total (14)	1934 Physical Geology (4) 3013 Organic Chemistry I (3) 3173 Environmental Regulations (3) 3413 Production Processes (3) 4493 Manufacturing Operations II (3) Total (16)

**FOURTH YEAR**

FIRST SEMESTER	SECOND SEMESTER
3113 Industrial Safety (3) 3143 Technical Presentations (3) 3613 Power Systems (3) 4433 Quality Control (3) Humanities & Social Sciences Course (3)  Total (15)	Professional Certification Requirements (0) 4254 Industrial Chemistry & Environmental Regulations <b>OR</b> 3244 Environmental Chemistry (4) 4355 Microbiology (5) 4373 Economic Decision Analysis (3) Humanities & Social Sciences Course (3)  Total (15)

\* First time entering SWOSU students need to take 1051 SWOSUConnect.

**Engineering Technology (ENGTE.BS)  
Manufacturing Engineering Technology Option  
Suggested Course Sequence**

**FIRST YEAR**

FIRST SEMESTER	SECOND SEMESTER
1051 SWOSUConnect* (1) 1101 Introduction to Technology (1) 1113 English Composition I (3) 1223 Technology & Society (3) 1513 College Algebra (3) Humanities & Social Sciences Course (3)	1004 Biological Concepts (4) 1103 American Government and Politics (3) 1213 English Composition II (3) 1613 College Trigonometry (3) Humanities & Social Sciences Course (3)
Total (14)	Total (16)

**SECOND YEAR**

FIRST SEMESTER	SECOND SEMESTER
1004 General Chemistry (4) 1713 Basic Electrical Science (3) 2513 Fabrication Processes I (3) 2823 Applied Calculus (3) Humanities & Social Sciences Course (3)	1043 <b>OR</b> 1053 U.S. History (3) 1433 Visual Basic Programming (3) 2463 Business Statistics <b>OR</b> 3413 Statistical Methods (3) 2713 Fundamental Electronics (3) 3523 Fabrication Processes II (3)
Total (16)	Total (15)

**THIRD YEAR**

FIRST SEMESTER	SECOND SEMESTER
1044 Basic Physics I (4) 2213 2D CAD (3) 2413 Non-Metallic Materials and Processes (3) 3463 Manufacturing Operations I (3) 3513 Materials Testing and Analysis (3)	3113 Industrial Safety (3) 3183 Statics & Strengths (3) 3413 Production Processes (3) 4454 Computer Aided Manufacturing (CAM) (4) 4493 Manufacturing Operations II (3)
Total (16)	Total (16)

**FOURTH YEAR**

FIRST SEMESTER	SECOND SEMESTER
3143 Technical Presentations (3) 3433 Automation and Control Systems (3) 4264 3D CAD (4) 4433 Quality Control (3) 4514 Machine Tool Processes (4)	3613 Power Systems (3) 4020 Professional Certification Requirements (0) 4373 Economic Decision Analysis (3) 4443 Materials Handling and Facility Planning (3) 4753 Senior Capstone (3)
Total (17)	Total (12)

\* First time entering SWOSU students need to take 1051 SWOSUConnect.

## BACHELOR OF SCIENCE APPLIED ENGINEERING MANAGEMENT (AEM.BS)

### GENERAL EDUCATION (Min. 40 hours)

**Bolded courses are required. *Italicized courses are recommended.***

<b>Communication</b> .....	<b>9</b>
<b>ENGL 1113</b> English Composition I	
<b>ENGL 1213</b> English Composition II	
COMM 1313 Introduction to Public Speaking OR	
<b>TECH 3143</b> Technical Presentations	
<b>Quantitative Reasoning</b> .....	<b>3</b>
<i>Select one course.</i>	
MATH 1143 Mathematical Concepts	
MATH 1153 Mathematical Applications	
MATH 1193 Elementary Statistics	
MATH 1313 Functions and Modeling	
<b>MATH 1513</b> College Algebra	
or a higher numbered math course	
<b>U. S. History</b> .....	<b>3</b>
<i>Select one course.</i>	
HIST 1043 U.S. History to 1877	
HIST 1053 U.S. History since 1877	
<b>American Government</b> .....	<b>3</b>
<b>POLSC 1103</b> American Government & Politics	
<b>Science</b> .....	<b>8</b>
<i>Select one course from Life Science and one course from Physical Science. One Science course must be a lab science.</i>	
<b>Life Science</b> .....	<b>3-4</b>
<b>BIOL 1004</b> Biological Concepts w/Lab	
BIOL 1013 Current Issues in Biology	
BIOL 1054 Principles of Biology I w/Lab	
<b>Physical Science</b> .....	<b>3-4</b>
ASTRO 1904 Astronomy	
CHEM 1004 General Chemistry w/Lab	
GEOL 1934 Physical Geology w/Lab	
PHY 1044 Basic Physics I w/Lab	
PHY 1063 General Physics (or a higher numbered chemistry or physics course)	
<b>SCI 1501</b> Concepts of Physical Science Lab	
<b>SCI 1513</b> Conc of Phy Science	
<b>Humanities and Social Science</b> .....	<b>12</b>
<i>Select one course from each sub-category and one additional course from any subcategory below.</i>	
<b>Humanities</b> .....	<b>3</b>
GEOG 1103 World Cultural Geography	
HIST 1033 World History	
HUM 1103 Introduction to Humanities	
<b>Fine Arts</b> .....	<b>3</b>
ART 1223 Art Survey	
COMM 1263 Introduction to Theatre	
LIT 2333 Introduction to Film	
LIT 2413 Introduction to Literature	
MUSIC 1013 Introduction to Music I	
MUSIC 1103 Music and Culture ( <i>Music majors only</i> )	
MUSIC 1123 History of Rock-n-Roll	
PHILO 1453 Introduction to Philosophy	
<b>Social and Human Sciences</b> .....	<b>3</b>
ASL 2163 American Sign Language I	
ECONO 2263 Intro to Macroeconomics	
ECONO 2363 Intro to Microeconomics	
ENTRP 1123 Intro to Business	
FINAN 2113 Personal Financial Planning	
ITAL 1004 Elementary Italian I	
KINES 1133 Wellness Conc & Exercise Applications	
LATIN 1054 Elementary Latin I (or higher number)	
PSYCH 1003 General Psychology	
SOCIO 1003 Introduction to Sociology	
SPAN 1054 Elementary Spanish I (or higher number)	
<b>TECH 1223</b> Technology and Society	

**Computer Proficiency**.....**0-3**  
COMSC 1023 Computers and Info Access, or a department-assigned course which satisfies the Computer Proficiency in the major, or the SWOSU Proficiency Exam, or HS course clearly defined to meet our goals.

**GE Elective**.....**0-3**  
Students who meet the computer proficiency by exam or HS course must choose an additional GE course from any category.

### APPLIED ENGINEERING MANAGEMENT MAJOR/MINOR

The Applied Engineering Management major/minor includes a 45-hour core requirement, 12 hours of management, either 24 hours from Electronics Option or 23 hours from Manufacturing Options, and a balance of 3000/4000 electives approved by the department to total 121-122 hours. Applied Engineering Management is currently accredited by the Association of Technology, Management, and Applied Engineering (ATMAE), [www.atmae.org](http://www.atmae.org), 701 Exposition Place, Suite 206, Raleigh, NC 27615 – Telephone: 919-635-8335.

#### Core Requirements.....**45**

CHEM 1004	General Chemistry
MATH 3413	Statistical Methods
<b>OR</b> ECONO 2463	Business Statistics
ECONO 2363	Introduction to Microeconomics
MFET 4020	Professional Certification Requirements
TECH 1101	Introduction to Technology
TECH 1713	Basic Electrical Science
TECH 2213	2D CAD
TECH 2413	Non-Metallic Materials & Processes
TECH 2513	Fabrication Processes I
TECH 3113	Industrial Safety
TECH 3463	Manufacturing Operations I
TECH 3613	Power Systems
TECH 4123	Industrial Supervision
TECH 4264	3D CAD
TECH 4433	Quality Control
TECH 4493	Manufacturing Operations II

#### Management electives (by advisement)..... **12**

ACCTG 2213	Principles of Financial Accounting
ACCTG 2313	Principles of Managerial Accounting
COMSC 1433	Visual Basic Programming
ECONO 2263	Introduction to Macroeconomics
ENTRP 1123	Introduction to Business
ENTRP 3123	Legal Environment of Business
MATH 1613	College Trigonometry
MATH 2823	Applied Calculus
MATH 3433	Statistics I
MFET 4443	Material Handling and Facility Planning
MNGMT 3233	Management
MNGMT 3333	Human Resource Management
MRKTG 3143	Principles of Marketing
TECH 4900	Orientation to Industrial Internship
TECH 4916	Industrial Internship

**Majors must select either the Electronics Technology Option or the Manufacturing Technology Option:**

#### Electronics Technology Option..... **24**

##### Required Courses..... **18**

TECH 2713	Fundamental Electronics
TECH 2813	Digital Devices
TECH 3123	Excel for Engineers & Technologists
TECH 3883	Prin of Electronic Communication
TECH 4223	Electronics Capstone
TECH 4853	Programmable Logic Controls

##### Electronics Electives..... **6**

*Select two courses:*

MFET 3433	Automation & Control Systems
TECH 3823	Industrial Electronics
TECH 4833	Microprocessors & Embedded Controls

*(Continued on next page)*

**Manufacturing Technology Option ..... 23**

**Required Courses.....23**

TECH	3123	Excel for Engineers & Technologists
TECH	3173	Environmental Regulations
TECH	3413	Production Processes
TECH	3513	Materials Testing & Analysis
TECH	3523	Fabrication Processes II
TECH	4454	Computer Aided Manuf (CAM)
TECH	4514	Machine Tool Processes

**TOTAL HOURS..... 121-122**

Applied Engineering Management articulates industrial management with a specialization in electronics technology, and manufacturing technology. Technical concepts and experiences are supported with courses in applied mathematics, science, and management. A supervised industrial internship completes the program. Specific curricular emphases include:

1. The analysis of industrial materials.
2. The identification of production processes.
3. An examination of the concepts of industrial management and human relations.
4. The solving of technical problems found in industry.
5. The development of skills relating to a specific area of specialization.

The mission of the Applied Engineering Management Program is to provide students the education and experience necessary to successfully perform the functions of an industrial manager.

**REGULATIONS PERTAINING TO GRADUATION**

Minimum credit hours for graduation .....	121-122
Minimum credit hours in the liberal arts & sciences.....	55
Minimum credit hours in upper-division (3000/4000 courses) .....	40
Minimum credit hours (3000/4000 courses) in major completed at SWOSU .....	8
Minimum credit hours at SWOSU (15 of the last 30) .....	30
Minimum Grade Point Average in all coursework.....	2.00
Minimum Grade Point Average in major.....	2.00



**Applied Engineering Management (AEM.BS)  
Electronics Technology Option  
Suggested Course Sequence**

**FIRST YEAR**

FIRST SEMESTER	SECOND SEMESTER
1051 SWOSUConnect* (1) 1043 <b>OR</b> 1053 U.S. History (3) 1101 Introduction to Technology (1) 1113 English Composition I (3) 1223 Technology & Society (3) 1513 College Algebra (3)	1103 American Government and Politics (3) 1213 English Composition II (3) 1713 Basic Electrical Science (3) 2463 Business Statistics <b>OR</b> 3413 Statistical Methods (3) GE Elective** (3)
Total (14)	Total (15)

**SECOND YEAR**

FIRST SEMESTER	SECOND SEMESTER
1514 Concepts of Physical Science (4) 2413 Non-Metallic Materials and Processes (3) 2713 Fundamental Electronics (3) Electronics Electives (3) Humanities and Social Sciences Course (3)	1004 Biological Concepts (4) 2213 2D CAD (3) 2363 Introduction to Microeconomics (3) 2513 Fabrication Processes I (3) 3883 Principles of Electronic Communications (3)
Total (16)	Total (16)

**THIRD YEAR**

FIRST SEMESTER	SECOND SEMESTER
1004 General Chemistry (4) 2813 Digital Devices (3) 3613 Power Systems (3) 4264 3D CAD (4) 4853 Programmable Logic Controls (3)	3113 Industrial Safety (3) 3123 Excel for Engineers & Technologists <b>OR</b> 4123 Industrial Supervision (3) 3143 Technical Presentations (3) Humanities & Social Sciences Course (3) Management Elective (3)
Total (17)	Total (15)

**FOURTH YEAR**

FIRST SEMESTER	SECOND SEMESTER
3463 Manufacturing Operations I (3) 4433 Quality Control (3) Management Elective (3) Electronics Electives (3) Humanities & Social Sciences Course (3)	4020 Professional Certification Requirements (0) 4123 Industrial Supervision <b>OR</b> 3123 Excel for Engineers & Technologists (3) 4223 Electronics Capstone (3) 4493 Manufacturing Operations II (3) Management Electives (6)
Total (15)	Total (15)

\* First time entering SWOSU students need to take 1051 SWOSUConnect.

\*\* GE Elective is needed if the computer proficiency is met by exam or HS course.

**Applied Engineering Management (AEM.BS)  
Manufacturing Technology Option  
Suggested Course Sequence**

**FIRST YEAR**

FIRST SEMESTER	SECOND SEMESTER
1051 SWOSUConnect* (1) 1043 <b>OR</b> 1053 US History (3) 1101 Introduction to Technology (1) 1113 English Composition I (3) 1223 Technology & Society (3) 1513 College Algebra (3)	1004 Biological Concepts (4) 1103 American Government and Politics (3) 1213 English Composition II (3) 2463 Business Statistics <b>OR</b> 3413 Statistical Methods (3) GE Elective** (3)
Total (14)	Total (16)

**SECOND YEAR**

FIRST SEMESTER	SECOND SEMESTER
1514 Concepts of Phy Science (4) 1713 Basic Elec Science (3) 2413 Non-Metallic Materials and Processes (3) 2513 Fabrication Processes I (3) Humanities & Social Sciences Course (3)	1004 General Chemistry (4) 2363 Introduction to Microeconomics (3) 3123 Excel for Engineers & Technologists (3) 3523 Fabrication Process II (3) Humanities & Social Sciences Course (3)
Total (16)	Total (16)

**THIRD YEAR**

FIRST SEMESTER	SECOND SEMESTER
2213 2D CAD (3) 3113 Industrial Safety (3) 3463 Manufacturing Operations I (3) 3513 Materials Testing and Analysis (3) Management Elective (3)	3143 Technical Presentations (3) 3413 Production Processes (3) 3613 Power Systems (3) 4123 Industrial Supervision <b>OR</b> 3173 Environmental Regulations (3) 4454 Computer Aided Manufacturing (CAM) (4)
Total (15)	Total (16)

**FOURTH YEAR**

FIRST SEMESTER	SECOND SEMESTER
4433 Quality Control (3) 4514 Machine Tool Processes (4) Humanities & Social Sciences Course (3) Management Elective (6)	3173 Environmental Regulations <b>OR</b> 4123 Industrial Supervision (3) 4020 Professional Certification Requirements (0) 4264 3D CAD (4) 4493 Manufacturing Operations II (3) Management Elective (3)
Total (16)	Total (13)

\* First time entering SWOSU students need to take 1051 SWOSUConnect.

\*\* GE Elective is needed if the computer proficiency is met by exam or HS course.

## **CERTIFICATE IN ENERGY TECHNOLOGY**

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**Required Courses .....12**

TECH/ENTRP 4013 Seminar in Oil and Gas

**OR** TECH 3413 Production Processes

NRM 4773 Natural Resource Management

**OR** TECH 3173 Environmental Regulations

TECH 3113 Industrial Safety

TECH 3613 Power Systems