ELECTRICAL ENGINEERING TECHNOLOGY, A.ENGT.

Begin Campus: Erie, Fayette, York
End Campus: Erie, Fayette, York

Program Description
The Electrical Engineering Technology (2EET) major helps prepare graduates for technical positions in the expanding fields of electronics, computers and microprocessors, instrumentation, and electrical equipment. The primary objective is to provide a broad foundation of theoretical and practical knowledge in the areas of electrical and electronic circuits, digital circuits, computers, electrical machinery, and programmable logic controls.

Graduates of the Electrical Engineering Technology major may qualify for admission to the baccalaureate degree majors in Electrical Engineering Technology offered at Penn State Harrisburg, Capital College; the baccalaureate degree major in Electrical and Computer Engineering Technology at Penn State Erie, The Behrend College; or the baccalaureate degree major in Electro-Mechanical Engineering Technology offered at Penn State Altoona, Penn State Berks, Penn State New Kensington or Penn State York. Two baccalaureate tracks are available to streamline the transition to these degree programs. Students interested in pursuing the baccalaureate degree major of Electrical Engineering Technology at Penn State Harrisburg should follow track c. A general track is also provided for students who decide not to continue their engineering technology education at the baccalaureate level.

What is Electrical Engineering Technology?
Electrical engineering technology focuses on the planning, designing, installing, operating, and maintaining electrical power systems and electronic devices. Electrical engineering technicians assist engineers with the manufacture, installation, operation, design, and repair of a wide range of electronic products.

You Might Like This Program If...
- You are passionate about technology, circuits, microprocessors, and electronics.
- You enjoy using computers and their software in a technical environment.
- You are interested in the design, application, installation, manufacture, operation, and maintenance of electrical systems and devices.

Entrance to Major
Students must have a minimum 2.0 GPA to change to this Associate degree after admission to the University.

Degree Requirements
For the Associate in Engineering Technology degree in Electrical Engineering Technology, a minimum of 66 credits is required:

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Education</td>
<td>21</td>
</tr>
<tr>
<td>Requirements for the Major</td>
<td>57-62</td>
</tr>
</tbody>
</table>

12-15 of the 21 credits for General Education are included in the Requirements for the Major. This includes: 3 credits of GN courses; 3 credits of GQ courses; 6 credits of GWS courses; 0-3 credits of GH or GS.

General Education
Connecting career and curiosity, the General Education curriculum provides the opportunity for students to acquire transferable skills necessary to be successful in the future and to thrive while living in interconnected contexts. General Education aids students in developing intellectual curiosity, a strengthened ability to think, and a deeper sense of aesthetic appreciation. These are requirements for all baccalaureate students and are often partially incorporated into the requirements of a program. For additional information, see the General Education Requirements (http://bulletins.psu.edu/undergraduate/general-education/associate-degree-general-education-program) section of the Bulletin and consult your academic adviser.

Foundations (grade of C or better is required.)
- Quantification (GQ): 3 credits
- Writing and Speaking (GWS): 3 credits

Knowledge Domains
- Arts (GA): 3 credits
- Humanities (GH): 3 credits
- Social and Behavioral Sciences (GS): 3 credits
- Natural Sciences (GN): 3 credits

Foundations or Knowledge Domains
- A General Education course selected from GWS, GQ, GN, GA, GH, or GS, and may include Integrative Studies (Inter-domain or Linked) courses: 3 credits

The keystone symbol appears next to the title of any course that is designated as a General Education course. Program requirements may also satisfy General Education requirements and vary for each program.

University Degree Requirements
Cultures Requirement
3 credits of United States (US) or International (IL) cultures coursework are required and may satisfy other requirements

Writing Across the Curriculum
3 credits required from the college of graduation and likely prescribed as part of major requirements.

Total Minimum Credits
A minimum of 60 degree credits must be earned for a associates degree. The requirements for some programs may exceed 60 credits. Students should consult with their college or department adviser for information on specific credit requirements.

Quality of Work
Candidates must complete the degree requirements for their major and earn at least a 2.00 grade-point average for all courses completed within their degree program.

Limitations on Source and Time for Credit Acquisition
Credit used toward degree programs may need to be earned from a particular source or within time constraints (see Senate Policy
83-80 (http://senate.psu.edu/policies-and-rules-for-undergraduate-students/82-00-and-83-00-degree-requirements/#83-80). For more information, check the Suggested Academic Plan for your intended program.

**Requirements for the Major**

To graduate, a student enrolled in the major must earn a grade of C or better in each course designated by the major as a C-required course, as specified by Senate Policy 82-44 (http://senate.psu.edu/policies-and-rules-for-undergraduate-students/82-00-and-83-00-degree-requirements/#82-44).

**Code** | **Title** | **Credits**
---|---|---
CAS 100 | Effective Speech | 3
CMPET 211 | Embedded Processors and DSP | 3
EET 212 | Op Amp and Integrated Circuit Electronics | 4
EET 214 | Electric Machines and Energy Conversion | 3
EET 215 | Electric Machines and Energy Conversion Laboratory | 1

**Prescribed Courses: Require a grade of C or better**

CMPET 117 | Digital Electronics | 3
CMPET 120 | Digital Electronics Laboratory | 1
EET 114 | Electrical Circuits II | 4
EET 118 | Electrical Circuits Laboratory | 1

**Additional Courses**

ENGL 15 | Rhetoric and Composition | 3
or ENGL 30 | Honors Freshman Composition | 3
PHYS 150 | Technical Physics I | 3
or PHYS 211 | General Physics: Mechanics | 3
or PHYS 250 | Introductory Physics I | 3
Select 5-6 credits of the following: | 5-6

MATH 22 | College Algebra II and Analytic Geometry & Plane Trigonometry | 3
MATH 40 | Algebra, Trigonometry, and Analytic Geometry | 3
MATH 81 | Technical Mathematics I & MATH 82 | 3
Select at least 22-26 credits from one of the following three tracks: | 22-26

**A. General Track**

EDSGN 100 | Introduction to Engineering Design | 3
EET 105 | Electrical Systems | 3
EET 275 | Introduction to Programmable Logic Controls | 3
or EMET 230 | Computerized I/O Systems | 3
IET 101 | Manufacturing Materials, Processes, and Laboratory | 3
MCHT 111 | Mechanics for Technology: Statics | 3
PHYS 151 | Technical Physics II | 3
or PHYS 212 | General Physics: Electricity and Magnetism | 3
or PHYS 251 | Introductory Physics II | 3
or CHEM 110 | Chemical Principles I | 3
& CHEM 111 | and Experimental Chemistry I | 3
STS 200 | Critical Issues in Science, Technology, and Society | 3
or STS/PHIL 233 | Ethics and the Design of Technology | 3
or STS 245 | Globalization, Technology, and Ethics | 3

Select 3-4 credits in consultation with your adviser from the approved program list

**B. Baccalaureate Electrical and Computer Engineering Technology (ECET) Track**

- CHEM 110 | Chemical Principles I | 3
- CHEM 111 | Experimental Chemistry I | 3
- CMPET 5 | Engineering Methods in Engineering Technology | 3
- EET 2 | Introduction to Engineering Technology | 3
- EET 101 | Electrical Circuits I | 3
- EET 109 | Electrical Circuits Laboratory I | 3
- EET 275 | Introduction to Programmable Logic Controls | 3
- EGT 119 | Introduction to CAD for Electrical and Computer Engineering | 3
- MATH 83 | Technical Calculus | 3
or MATH 140 | Calculus With Analytic Geometry | 3
- MATH 210 | Calculus with Engineering Technology | 3
Applications (or 3 credits of General Education natural science GN) | 3

**C. Baccalaureate Electro-Mechanical Engineering Technology (EMET) Track**

EDSGN 100 | Introduction to Engineering Design | 3
EET 105 | Electrical Systems | 3
EET 275 | Introduction to Programmable Logic Controls | 3
or EMET 230 | Computerized I/O Systems | 3
IET 101 | Manufacturing Materials, Processes, and Laboratory | 3
MCHT 111 | Mechanics for Technology: Statics | 3
MATH 83 | Technical Calculus | 3
or MATH 140 | Calculus With Analytic Geometry | 3
PHYS 151 | Technical Physics II | 3
or PHYS 212 | General Physics: Electricity and Magnetism | 3
or PHYS 251 | Introductory Physics II | 3
or CHEM 110 | Chemical Principles I | 3
& CHEM 111 | and Experimental Chemistry I | 3
STS 200 | Critical Issues in Science, Technology, and Society | 3
or STS/PHIL 233 | Ethics and the Design of Technology | 3
or STS 245 | Globalization, Technology, and Ethics | 3

1. A student planning to re-enroll into the baccalaureate degree major of Electro-Mechanical Engineering Technology (EMET), after graduation from the 2EET program, must receive a grade of C or better in order to meet requirements of the EMET degree.
2. This includes 3 credits of General Education courses: 3 credits of GH or GS.
3. A student planning to re-enroll into the baccalaureate degree major of Electrical Engineering Technology at Penn State Harrisburg, after graduation from the 2EET program, should follow Track C. They should select MATH 140 instead of MATH 83.

**Program Educational Objectives**

To produce graduates who, during the first few years of professional practice, will:

1. Demonstrate broad knowledge of electrical/electronics engineering technology practices to support design, application, installation,
manufacturing, operation, and maintenance as required by their employer,
2. Apply basic mathematical and scientific principles for technical problem solving in areas which may include circuit analysis of both analog and digital electronics, microprocessors, programmable logic control, and electrical machines,
3. Utilize computers and software in a technical environment,
4. Demonstrate competence in written and oral communication,
5. Work effectively as an individual and as a member of a multidisciplinary team,
6. Show awareness of social concerns and ethical/professional responsibilities in the workplace, and
7. Matriculate into a baccalaureate degree and/or continue their professional training and adapt to changes in the workplace, through additional formal or informal education.

Program Objectives (Student Outcomes)

Students should possess:

a. an ability to apply the knowledge, techniques, skills and modern tools of the disciplines to electrical engineering technology activities,
b. an ability to apply a knowledge of mathematics, science, engineering, and technology to engineering technology problems that require limited application of principles but extensive practical knowledge,
c. an ability to conduct standard tests and measurements, and to conduct, analyze and interpret experiments,
d. an ability to function effectively as a member of a technical team,
e. an ability to identify, analyze and solve narrowly defined engineering technology problems,
f. an ability to apply written, oral, and graphical communication in both technical and non-technical environments; and an ability to identify and use appropriate technical literature,
g. an understanding of the need for and an ability to engage in self-directed continued professional development, including engineering standards,
h. an understanding of and a commitment to address professional and ethical responsibilities including a respect for diversity,
i. a commitment to quality, timeliness and continuous improvement.

In addition, 2EET graduates must demonstrate knowledge and hands-on competence appropriate to the objectives of the program in:

A. the application of circuit analysis and design, computer programming, associated software, analog and digital electronics, and microcomputers, and engineering standards to the building, testing, operation, and maintenance of electrical/electronic(s) systems; and
B. the application of natural sciences and mathematics at or above the level of algebra and trigonometry to the building, testing, operation, and maintenance of electrical/electronic systems.

Academic Advising

The objectives of the university’s academic advising program are to help advisees identify and achieve their academic goals, to promote their intellectual discovery, and to encourage students to take advantage of both in-and out-of class educational opportunities in order that they become self-directed learners and decision makers.

Both advisers and advisees share responsibility for making the advising relationship succeed. By encouraging their advisees to become engaged in their education, to meet their educational goals, and to develop the habit of learning, advisers assume a significant educational role. The advisee’s unit of enrollment will provide each advisee with a primary academic adviser, the information needed to plan the chosen program of study, and referrals to other specialized resources.

READ SENATE POLICY 32-00: ADVISING POLICY (http://senate.psu.edu/policies-and-rules-for-undergraduate-students/32-00-advising-policy)

Erie
David Loker
Associate Professor of Engineering and Program Chair
250 Burke
Erie, PA 16563
814-898-6478
drl3@psu.edu

Fayette
Andrzej Gapinski
Associate Professor and Program Coordinator
2201 University Drive
Lemont Furnace, PA 15456
724-430-4239
ajg2@psu.edu

York
Michael Marcus
Associate Professor and Program Coordinator
Room 35 Main Classroom Building
1031 Edgecomb Ave.
York, PA 17403
717-771-4089
mxm81@psu.edu

Suggested Academic Plan

Electrical Engineering Technology - General Track at Fayette Campus

The course series listed below provides only one of the many possible ways to move through this curriculum. The University may make changes in policies, procedures, educational offerings, and requirements at any time. This plan should be used in conjunction with your degree audit (accessible in LionPATH as either an Academic Requirements or What If report). Please consult with a Penn State academic adviser on a regular basis to develop and refine an academic plan that is appropriate for you.

First Year

<table>
<thead>
<tr>
<th>Fall</th>
<th>Credits</th>
<th>Spring</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 26 (GQ)‡†</td>
<td>3</td>
<td>EET 114*</td>
<td>4</td>
</tr>
<tr>
<td>ENGL 15 (GWS)‡†</td>
<td>3</td>
<td>EET 118*</td>
<td>1</td>
</tr>
<tr>
<td>EET 105</td>
<td>3</td>
<td>CMPET 117*</td>
<td>3</td>
</tr>
<tr>
<td>IET 101</td>
<td>3</td>
<td>CMPET 120</td>
<td>1</td>
</tr>
<tr>
<td>EDSGN 100</td>
<td>3</td>
<td>MCHT 111</td>
<td>3</td>
</tr>
<tr>
<td>PSU 8</td>
<td>1-3</td>
<td>MATH 22 (GQ)‡†</td>
<td>3</td>
</tr>
<tr>
<td>CAS 100 (GWS)‡†</td>
<td></td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

16-18                  |         | 18                       |         |
Electrical Engineering Technology, A. ENGT.

Second Year

<table>
<thead>
<tr>
<th>Fall</th>
<th>Credits</th>
<th>Spring</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EET 214</td>
<td>3</td>
<td>EET 212</td>
<td>4</td>
</tr>
<tr>
<td>EET 215</td>
<td>1</td>
<td>EET 275</td>
<td>3</td>
</tr>
<tr>
<td>CMPET 211</td>
<td>3</td>
<td>PHYS 151 (or CHEM 110 and CHEM 111 (4 credits))</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 150 (GN)†</td>
<td>3</td>
<td>STS 233</td>
<td>3</td>
</tr>
<tr>
<td>General Education Course</td>
<td>3</td>
<td>Technical Elective or General Education Course</td>
<td>3-4</td>
</tr>
<tr>
<td>General Education Course of Technical Elective</td>
<td>3-4</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>16-17</td>
</tr>
</tbody>
</table>

Total Credits 67-70

* Course requires a grade of C or better for the major
‡ Course requires a grade of C or better for General Education
# Course is an Entrance to Major requirement
† Course satisfies General Education and degree requirement

University Requirements and General Education Notes:

US and IL are abbreviations used to designate courses that satisfy University Requirements (United States and International Cultures).

W, M, X, and Y are the suffixes at the end of a course number used to designate courses that satisfy University Writing Across the Curriculum requirement.

GWS, GQ, GN, GA, GH, and GS are abbreviations used to identify General Education program courses. General Education includes Foundations (GWS and GQ) and Knowledge Domains (GN, GA, GH, and GS). Foundations courses (GWS and GQ) require a grade of ‘C’ or better.

Integrative Studies courses can be completed for the General Education program. N is the suffix at the end of a course number used to designate an Inter-Domain course and Z is the suffix at the end of a course number used to designate a Linked course.

College Notes
A student’s career/graduate school plans should be considered in developing an individual academic plan. Be sure to consult an adviser in this department when scheduling courses.

MCH T 111
MCH T 111 and STS 233 can be swapped (STS 233 in Semester 2 and MCH T 111 in Semester 4) if a student starts in Math 21 in the first semester.

Technical Electives
Students must have an additional 10 credits of technical elective from the following list: BET 201, BISC 3, CHEM 101, CHEM 110, CHEM 111, CMPSC 101, CMPSC 201C, EET 214, EET 215, EET 275, EET 297, EMET 230, IST 210, IST 220, MATH 83, MATH 140, MATH 141, PHYS 151, PHYS 251, TELECOM 140.

Technical electives typically offered in Fall only semester: CHEM 101 or CMPSC 121 (Math 140 Co-requisite). Math 140 can be used as a technical elective and is offered every semester and is recommended if a student intends to pursue a B.S. degree.

PHYS 150
Most Students should take Physics 151, however students can use both CHEM 110 and 111 to satisfy this requirement

STS 233
MCH T 111 and STS 233 can be swapped (STS 233 in Semester 2 and MCH T 111 in Semester 4) if a student starts in Math 21 in the first semester.

Electrical Engineering Technology at Erie Campus
The course series listed below provides only one of the many possible ways to move through this curriculum. The University may make changes in policies, procedures, educational offerings, and requirements at any time. This plan should be used in conjunction with your degree audit (accessible in LionPATH as either an Academic Requirements or What If report). Please consult with a Penn State academic adviser on a regular basis to develop and refine an academic plan that is appropriate for you.

First Year

<table>
<thead>
<tr>
<th>Fall</th>
<th>Credits</th>
<th>Spring</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EET 101</td>
<td>3</td>
<td>EET 114*</td>
<td>4</td>
</tr>
<tr>
<td>EET 109</td>
<td>1</td>
<td>EET 118†</td>
<td>1</td>
</tr>
<tr>
<td>EET 2†</td>
<td>1</td>
<td>CMPET 117†</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 15, 30, or ESL 15 (GWS)‡†</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH 81 (GQ)</td>
<td>3</td>
<td>CMPET 5</td>
<td>1</td>
</tr>
<tr>
<td>General Education Course</td>
<td>3</td>
<td>MATH 82 (GQ)‡†</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PHYS 250 (GN)†</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>14</td>
</tr>
</tbody>
</table>

Second Year

<table>
<thead>
<tr>
<th>Fall</th>
<th>Credits</th>
<th>Spring</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMPET 211</td>
<td>3</td>
<td>CAS 100 (GWS)‡‡</td>
<td>3</td>
</tr>
<tr>
<td>EET 212</td>
<td>4</td>
<td>CHEM 110 (GN)‡</td>
<td>3</td>
</tr>
<tr>
<td>EET 214</td>
<td>3</td>
<td>CHEM 111†</td>
<td>1</td>
</tr>
<tr>
<td>EET 215</td>
<td>1</td>
<td>EET 275</td>
<td>3</td>
</tr>
<tr>
<td>MATH 83‡†</td>
<td>4</td>
<td>EGT 119</td>
<td>2</td>
</tr>
<tr>
<td>General Education Course</td>
<td>3</td>
<td>General Education Course</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MATH 210 (GQ) or Natural Science Course (GN)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>18</td>
</tr>
</tbody>
</table>

Total Credits 67

* Course requires a grade of C or better for the major
‡ Course requires a grade of C or better for General Education
# Course is an Entrance to Major requirement
† Course satisfies General Education and degree requirement

University Requirements and General Education Notes:

US and IL are abbreviations used to designate courses that satisfy University Requirements (United States and International Cultures).
W, M, X, and Y are the suffixes at the end of a course number used to designate courses that satisfy University Writing Across the Curriculum requirement.

GWS, GQ, GN, GA, GH, and GS are abbreviations used to identify General Education program courses. General Education includes Foundations (GWS and GQ) and Knowledge Domains (GN, GA, GH, and GS). Foundations courses (GWS and GQ) require a grade of ‘C’ or better.

Integrative Studies courses can be completed for the General Education program. N is the suffix at the end of a course number used to designate an Inter-Domain course and Z is the suffix at the end of a course number used to designate a Linked course.

**College Notes**

**MATH 81 (GQ)**

The course is an entrance to major course to the ECET baccalaureate major requirement. Student must obtain a quality grade of C or better for entrance into the ECET major.

**MATH 83 (GQ)**

The course is an entrance to major course to the ECET baccalaureate major requirement. Student must obtain a quality grade of C or better for entrance into the ECET major.

Math substitutions: MATH 26 instead of MATH 81, MATH 22 instead of MATH 82, MATH 140 instead of MATH 83.

**EET 212**

Course will satisfy Writing Across the Curriculum requirement.

**Electrical Engineering Technology at York Campus**

The course series listed below provides only one of the many possible ways to move through this curriculum. The University may make changes in policies, procedures, educational offerings, and requirements at any time. This plan should be used in conjunction with your degree audit (accessible in LionPATH as either an Academic Requirements or What If report). Please consult with a Penn State academic adviser on a regular basis to develop and refine an academic plan that is appropriate for you.

**Academic Requirements**

Academic planning guides should always be used in conjunction with a degree audit and consultation with an adviser.

**University Requirements and General Education Notes:**

US and IL are abbreviations used to designate courses that satisfy University Requirements (United States and International Cultures).

W, M, X, and Y are the suffixes at the end of a course number used to designate courses that satisfy University Writing Across the Curriculum requirement.

GWS, GQ, GN, GA, GH, and GS are abbreviations used to identify General Education program courses. General Education includes Foundations (GWS and GQ) and Knowledge Domains (GN, GA, GH, and GS). Foundations courses (GWS and GQ) require a grade of ‘C’ or better.

Integrative Studies courses can be completed for the General Education program. N is the suffix at the end of a course number used to designate an Inter-Domain course and Z is the suffix at the end of a course number used to designate a Linked course.

**College Notes:**

Scheduling patterns for courses not taught each semester: Some major/option courses are offered only Fall or Spring semester, as listed on guide. The courses in this major are sequential. If take out of sequence, scheduling conflicts may arise.

**Program Notes:**

Track Selections - see audit

**Academic Advising Notes:** Academic planning guides should always be used in conjunction with a degree audit and consultation with an adviser.

**Career Paths**

Many electrical technicians work in and with electrical utility companies and industries where they are involved in electrical power generation, power distribution, and machine control. Electrical technicians are often involved with the installation, operation, and maintenance of computer equipment and instrumentation. They may also work in technical sales.

MORE INFORMATION ABOUT POTENTIAL CAREER OPTIONS FOR GRADUATES OF THE ELECTRICAL ENGINEERING TECHNOLOGY PROGRAM (http://career.engr.psu.edu)

MORE INFORMATION ABOUT OPPORTUNITIES FOR GRADUATE STUDIES (http://www.engr.psu.edu/students/grad-prospective/default.aspx)

**Accreditation**

This program is accredited by the Engineering Technology Accreditation Commission of ABET, www.abet.org (http://www.abet.org).
MORE INFORMATION ABOUT ABET ACCREDITATION (http://www.abet.org)

Contact

University Park
SCHOOL OF ENGINEERING DESIGN, TECHNOLOGY, AND PROFESSIONAL PROGRAMS
213 Hammond Building
University Park, PA 16802
814-865-2952

http://www.sedtapp.psu.edu

Erie
SCHOOL OF ENGINEERING
242 Jack Burke Research and Economic Development Center
5101 Jordan Road
Erie, PA 16563
814-898-6125
engineering@psu.edu

http://behrend.psu.edu/school-of-engineering

Fayette
2201 University Drive
Lemont Furnace, PA 15456
724-430-4239
ajg2@psu.edu

http://fayette.psu.edu/electrical-engineering-technology

York
35A Main Classroom Building
1031 Edgecomb Ave.
York, PA 17403
717-771-4089
mxm81@psu.edu

http://york.psu.edu/academics/associate/electrical-engineering-technology