

# Electronics Engineering Technology

## Degrees Offered

Bachelor of Science in Electronics Engineering Technology (Portland Campus)

Electronics Engineering Technology is concerned with theory, concepts, and practice of applied electronics engineering. Emphasis is placed on the practical application of engineering knowledge. As a result, the Electronics Engineering Technology graduate possesses a combination of theoretical and practical understanding and requires minimal on-the-job training.

Oregon Institute of Technology's ABET accredited Bachelor of Science degree in Electronics Engineering Technology is conveniently offered at the OIT-Portland West Campus in order to accommodate degree seeking professionals working for high-tech companies. The West Campus is located at the heart of the high-tech industry cluster (Silicon Forest), minutes away from companies such as Intel, Tektronix, MAXIM, Credence, Lattice, Synopsis, TriQuint, and ESI. Some of the core courses for the degree and technical electives are also available online and at the OIT-Portland East campus.

## Career Opportunities

The program is designed to prepare graduates to assume engineering and technology positions in the electronics industry. Graduates of the Electronics Engineering Technology Program fulfill a wide range of functions within industry. Bachelor's degree graduates are currently placed in positions such as component and system design, test engineering, product engineering, field engineering, manufacturing engineering, sales or market engineering, and quality control engineering. The program also provides a solid preparation for students intending to continue to graduate school to pursue master's degrees in engineering, engineering management and MBAs.

Employers of Electronics Engineering Technology graduates include research and development laboratories, electronic equipment manufacturers, public utilities, colleges and universities, government agencies, medical laboratories and hospitals, electronic equipment distributors, semiconductor companies, and automated electronic controlled processing companies. Recent graduates have been employed at companies such as MAXIM, Tektronix, TriQuint, MSE and Intel.

## Objectives

The objectives of the Electronics Engineering Technology Program are:

1. The graduates of the program will possess a strong technical background as well as analytical and problem solving skills, and will contribute in a variety of technical roles within the electronics and high-tech industry. BSEET graduates are expected to be employed as test engineers, characterization engineers, applications engineers, field engineers, hardware engineers, process engineers, and similar engineering technology positions within this industry.
2. The graduates of the program will be working as effective team members with excellent oral and written communication skills, assuming technical and managerial leadership roles throughout their career.
3. The graduates of the program will be committed to professional development and lifelong learning by engaging in professional and/or graduate education in order to stay current in their field and achieve continued professional growth.

## Student Preparation

OIT's Portland campus offers a degree program designed to accommodate working professionals with evening delivery of upper-division and custom bridging courses. It is especially suited for working professionals with an associate degree in Electronics Engineering Technology, Microelectronics Technology, or equivalent coursework. Students entering the B.S. degree in Electronics Engineering Technology program by transfer are requested to contact the EET Program Director concerning transfer of technical coursework.

Our BSEET program has articulation and transfer agreements with the Electronics, Microelectronics, and Renewable Energy Technology programs at Portland Community College, Clackamas Community College, Chemeketa Community College, and Columbia Gorge Community College. Students transferring to OIT with an AAS degree from these programs will not be required to take any lower-division electronics coursework. It is recommended that students have completed Calculus II prior to transferring to the BSEET program at OIT, since Integral Calculus is a pre-requisite for most upper-division BSEET courses.

We encourage students to start the advising process with OIT right after they complete the first year of their AAS degree.

## Accreditation

The Electronics Engineering Technology program is accredited by the Technology Accreditation Commission (TAC) of ABET, Inc., 111 Market Place, Suite 1050, Baltimore, MD 21202-4012, telephone: (410) 347-7700. ABET is a specialized accrediting board recognized by the Council for Higher Education and/or the Secretary of the U.S. Department of Education.

## Degree Requirements

A rigorous curriculum in Electronics Engineering Technology requires 187 credit hours, taking a full-time student approximately four years to complete.

## Bachelor of Science in Electronics Engineering Technology

### Curriculum

The curriculum map below shows the required courses, recommended sequence, and recommended terms during which they should be taken for students transferring into the program with an accredited AAS degree or equivalent lower division coursework (freshman and sophomore years). Transfer students and part-time students should contact the EET program director for a customized curriculum tailored to their individual circumstances.

### Freshman and Sophomore Years

The degree requirements for the first two years can be fulfilled by completing an accredited Associate of Applied Science degree in Electronics Engineering Technology, Microelectronics Engineering Technology, Microelectronics Technology, Electrical Engineering Transfer, Renewable Energy Technology, or equivalent coursework. Below is a list of courses to satisfy the requirements for the first two years of the degree (Freshman and Sophomore). OIT has articulation agreements with Portland Community College, Clackamas Community College, Chemeketa Community College, and Columbia Gorge Community College. Students transferring to OIT with an AAS degree from these programs will not be required to take any lower-division electronics courses at OIT. In addition to the electronics courses, students must complete the programming, math and science, communications, and general education courses specified below during the Freshman and Sophomore years while completing their AAS degree in order to be able to complete the upper-division (Junior and Senior) BSEET courses at OIT in 2 years. The minimum requirements to start the upper-division sequence at OIT is completion of the AAS degree and MATH252.

#### Electronics

EET 215 Digital Circuits I (4 cr), EET 216 Digital Circuits II (4 cr), EET 217 Electric Circuits I (4 cr), EET 218 Electric Circuits II (4 cr), EET 219 Semiconductor Devices & Amplifiers (4 cr), and 200-level Technical Electives (16 cr)  
Total: 36 cr.

#### Programming

CST 116 C++ Programming I (4 cr)  
Total: 4 cr.

#### Mathematics and Science

MATH 111 College Algebra (4 cr), MATH 121 Trigonometry (4 cr), MATH 251 Differential Calculus (4 cr), MATH 252 Integral Calculus (4 cr), PHY 221 General Physics w/ Calculus (4 cr), PHY 222 General Physics w/ Calculus (4 cr), PHY 222 General Physics w/ Calculus (4 cr), Math/Science Elective (3 cr)  
Total: 31 cr.

#### Communications

SPE 111 Fundamentals of Speech (3 cr), WRI 121 English Composition (3 cr), WRI 122 English Composition (3 cr), WRI 227 Technical Report Writing (3 cr)  
Total: 12 cr.

#### General Education

Humanities electives (6 cr), social science electives (6 cr.)  
Total: 12 cr.

**Sophomore Year Summer**

MATH 254N Vector Calculus I	4
MATH 321 Applied Differential Equations I	3
<b>Total</b>	<b>7</b>

**Junior Year Fall**

EE 320 Advanced Circuit & System Analysis	5
EE 321 Electronics I	5
MGT 345 Engineering Economy	3
<b>Total</b>	<b>13</b>

**Junior Year Winter**

EE 323 Electronics II	5
EE 333 Microcontroller Engineering	4
ENGR267 Comm. Program. for Engineers	3
<b>Total</b>	<b>12</b>

**Junior Year Spring**

EE 325 Electronics III	5
EE 335 Advanced Microcontroller Engineering	4
Technical Elective	3
<b>Total</b>	<b>12</b>

**Junior Year Summer**

SPE 321 Small Group and Team Comm.	3
WRI 327 Advanced Technical Writing	3
Technical Elective	3
<b>Total</b>	<b>9</b>

**Senior Year Fall**

EE 331 Digital System Design with HDL	4
ENGR 465 Capstone Project	2
Technical Elective	3
General Ed Elective	3
<b>Total</b>	<b>12</b>

**Senior Year Winter**

EE432 Advanced Digital Design with HDL	4
EE430 Linear Systems and DSP	5
ENGR 465 Capstone Project	2
General Ed Elective	3
<b>Total</b>	<b>14</b>

**Senior Year Spring**

EE401 Communication Systems	5
ENGR 465 Capstone Project	2
General Ed Elective	3
General Ed Elective	3
<b>Total</b>	<b>13</b>