Oregon Institute of Technology - Wilsonville

Bachelor of Science - Electronics Engineering Technology

Curriculum Map according to Catalog Year 2017-18

Any deviations from courses listed below must be approved by academic advisor, deptartment chair, and Registrar's office. Substitution is not official until shown in official student records.

Course Notes	Required Oregon Tech Courses				Pre- and Co-requisites +Corequisite * Pre- or corequisite ^Grade ≥ C not reqd	FRESHMAN			SOPHOMORE			JUNIOR			SENIOR		
	Prefix	No.	Course Title	Credits		F	W	S	F	W	S	F	W	S	F	W	S
Communications				**18**													
	SPE	**111**	**Public Speaking**	**3**		3											
	SPE	**321**	**Small Group & Team Communication**	**3**	SPE 111 ^								3				
	WRI	**121**	**English Composition**	**3**	SAT/ACT or writing sample	3											
	WRI	**122**	**Argumentative Writing**	**3**	WRI 121		3										
	WRI	**227**	**Technical Report Writing**	**3**	WRI 122 ^, SPE 111*			3									
1	**WRI**	**3XX/4XX**	**Advanced Writing Elective**	**3**	WRI 227 ^												3
Math/Science				**40**													
	MATH	**111**	**College Algebra**	**4**	MATH 100	4											
	MATH	**112**	**Trigonometry**	**4**	MATH 111		4										
	MATH	**251**	**Differential Calculus**	**4**	MATH 112			4									
	MATH	**252**	**Integral Calculus**	**4**	MATH 251				4								
	MATH	**254N**	**Vector Calculus I**	**4**	MATH 252									4			
	MATH	**321**	**Appl. Differential Equations I**	**4**	MATH 252							4					
2	**MATH**	**361**	**Statistical Methods I**	**4**	MATH 111^										4		
	PHY	**221**	**General Physics w/ Calculus**	**4**	MATH 251, MATH 252*				4								
	PHY	**222**	**General Physics w/ Calculus**	**4**	MATH 252, PHY 221					4							
	PHY	**223**	**General Physics w/ Calculus**	**4**	PHY 222						4						
General Education				**26**													
See Catalog for more info.			**Social Science elective**	**3**	Per catalog			3									
			Social Science elective	**3**	Per catalog					3							
			Social Science elective	**3**	Per catalog						3						
			Social Science elective	**3**	Per catalog									**3**			
			Humanities elective	**3**	Per catalog			3									
			Humanities elective	**3**	Per catalog					3							
			Humanities elective	**3**	Per catalog										**3**		
			Elective	**2**	Per catalog												**2**
	MGT	**345**	**Engineering Economy**	**3**	MATH 105 or MATH 111							**3**					
Lower Division Electrical Engineering and Programming				**43**													
	EE	**131**	**Digital Electronics I**	**4**	MATH 111	4											
	EE	**133**	**Digital Electronics II**	**4**	EE 131 or CST 162, MATH 111		4										
	EE	**121**	**Fundamentals of Electric Circuits I**	**4**	MATH 111		4										
	EE	**123**	**Fundamentals of Electric Circuits II**	**4**	EE 121, MATH 112			4									
	EE	**219**	**Intro to Semiconductors & Amplifiers**	**4**	EE 123				4								
3	**EET**	**2XX**	**Techincal Elective**	**4**	Per catalog					4							
	EET	**2XX**	**Techincal Elective**	**4**	Per catalog					4							
	EET	**2XX**	**Techincal Elective**	**4**	Per catalog						4						
	EET	**2XX**	**Techincal Elective**	**4**	Per catalog						4						
	CST	**116**	**C++ Programming I**	**4**	MATH 111				4								
	ENGR	**267**	**Engineering Programming**	**3**	MATH 251								**3**				
Circuits, Systems, DSP, and Communications				**15**													
4	**EE**	**320**	**Advanced Circuit and System Analysis**	**5**	EE 123 or EE 223, MATH 252							**5**					
	EE	**430**	**Linear Systems and DSP**	**5**	EE 225 or EE 320											**5**	
	EE	**401**	**Communication Systems**	**5**	EE 311 or EE 430												**5**
Analog & Mixed Signal Electronics				**15**													
	EE	**321**	**Electronics I**	**5**	EE 223 or EE 123, MATH 252							**5**					
	EE	**323**	**Electronics II**	**5**	EE 321								**5**				
	EE	**325**	**Electronics III**	**5**	EE 323									**5**			
Microcontroller Design, Digital Design, and HDL				**16**													
	EE	**333**	**Introduction to Microcontrollers**	**4**	CST 116, CST 133 or EE 133 or EET 216										**4**		
	EE	**331**	**Digital System Design with HDL**	**4**	CST 133 or EE 133 or EE 347								**4**				
	EE	**335**	**Advanced Microcontrollers**	**4**	EE 333											**4**	
	EE	**432**	**Advanced Digital System Design**	**4**	EE 331, CST 116									**4**			
Senior Project and Technical Electives				**15**													
5	**(R)EE**	**XX/4XX**	**Technical Elective**	**3**	Per catalog										**3**		
	(R)EE	**XX/4XX**	**Technical Elective**	**3**	Per catalog											**3**	
	(R)EE	**XX/4XX**	**Technical Elective**	**3**	Per catalog												**3**
	ENGR	**465**	**Capstone Project**	**2**	Junior standing & consent										**2**		
	ENGR	**465**	**Capstone Project**	**2**	Junior standing & consent											**2**	
	ENGR	**465**	**Capstone Project**	**2**	Junior standing & consent												**2**
			Total Required Credits	**188**		14	15	17	16	18	15	17	15	16	16	14	15

Notes:

1) Select from: WRI 327 Advanced Technical Writing, WRI 350 Documentation Development, or WRI 410 Proposal and Grant Writing

2) MATH 243 Introduction to Statistics or MATH465 Mathematical Statistics may be used instead.

3) Lower division technical electives include CST 126, CST 136, or other approved 200-level EET, EE, ENGR, REE, or CST courses.

4) EE320 can be substituted with EE225.

5) Upper division EE or REE courses (except EE 311, 320, EE 347, EE 431), or courses included in the list for a specific degree option. Other courses may be used with approval.

Last Revision: 1/31/18

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. Oregon Tech has articulation agreements with various community colleges throughout Oregon. Students transferring to Oregon Tech with an AAS degree from these programs will not be required to take any lower-division electronics courses at Oregon Tech. The curriculum map provides a list of lower division courses to satisfy the requirements for the first two years of the degree. Completion of all these courses is not required to be able to transfer, but is recommend for 2+2 transferability.

BSEET Degree Technical Emphases

Students in the BSEET program may chose to specialize in a particular area by selecting their engineering technical elective courses from the appropriate list below. These lists of courses are provided for guidance. Students are not required to select a technical emphasis, and technical emphases will not appear on the students' transcripts.

1. Electrical Power

Choose at least three engineering electives from the following list:

EE 419	Power Electronics	4
REE 243	Electrical Power	4
REE 253	Elect	4
REE 345	Wind Power	3
REE 413	Electric Power Conversion Systems	3
REE 453	Power System Analysis	3
REE 454	Power System Protection and Control	3

2. Optical Engineering

Choose at least three engineering electives from the following list

EE 448	Geometric Optics	4
EE 449	Optical Detection and Radiometry	4
EE 450	Physical Optics	4
EE 451	Lasers	4
EE 452	Waveguides and Fiber Optics	4
EE 453	Optical Metrology	4

3. Microelectronics

Choose at least three engineering electives from the following list:

EE 325	Electronics III	5
EE 421	Analog IC Design	5
EE 307	Embedded Systems Testing	4
EE 423	CMOS Digital IC Design	5
EE 407	Adv. LabVIEW Programming	4
EE 407	RF/Microwave Systems	4

4. Renewable Energy

Choose at least three engineering electives from the following list:

EE 419	Power Electronics	4
ENGR 355	Thermodynamics	3
REE 243	Electrical Power	4
REE 253	Electromechanical Energy Convers	4
REE 345	Wind Power	3
REE 346	Biofuels and Biomass	3
REE 412	Photovoltaic Systems	3
REE 413	Electric Power Conversion System	3
REE 427	Greenhouse Gas Accounting	3

5. Robotics, Automation, and Control

Choose at least three engineering electives from the following list:

ENGR 420	Engineering Modeling	4
ENGR 421	Automation Systems	4
ENGR 422	Process Control	4
ENGR 423	Motion Control and Robotics	4
REE 463	Energy Systems Instrumentation	3

Graduation

Students must file an Application for Degree at least two terms prior to the term of Graduation (visit http://www.oit.edu/registrar/graduate). A minimum of 45 credits must be completed at Oregon Tech before a degree is awarded. Baccalaureate students must complete a minimum of 60 credits of upper-division work. Final grade of "C" or better must be earned in all EE and EET courses that are prerequisites for another EE or EET course.

Minors

Oregon Tech offers several Minors, including Applied Mathematics, Business, and others. Students should refer to the catalog (www.oit.edu/catalog) for a list of available Minors and corresponding course requirements. A minimum of 18 credits in the subject field outside the student's major are required.

Bachelor of Science in Electrical Engineering

Oregon Tech Bachelor of Science in Electronics Engineering Technology graduates may complete 36 additional credits to receive a Bachelor of Science in Electrical Engineering (post-baccalaureate). Students who have completed an ABET accredited bachelor's in Electronics Engineering Technology from another institution must complete a minimum of 45 Oregon Tech credits to receive the BS in Electrical Engineering from Oregon Tech. Students pursuing this option should work with their academic advisor to draft and academic plan that ensures all BSEE curriculum requirements are met.

The following is a list of additional courses that Oregon Tech BSEET graduates are required to complete in order to meet the BSEE degree requirements.

Mathematics and Science (19 cr)

CHE 201/204	General Chemistry and Lab[1]	3
CHE 202/205	General Chemistry and Lab[1,2]	3
MATH 253N	Series and Sequences	4
MATH 341	Linear Algebra I	3
MATH 465	Mathematical Statistics	4

Required Electrical Engineering (11 cr)

EE 341	Elec. And Mag. With Trans. Lines	4
EE 343	Solid-State Electronic Devices	3
EE 355	Control System Design	4

Engineering Technical Electives (6 cr)

(R)EE 3xx/4xx	Technical Elective[3]	3
(R)EE 3xx/4xx	Technical Elective[3]	3

Additional courses needed for students who completed a BSEET degree from another institution (9cr)

Math/Science/Technical Elective[3]	3
Math/Science/Technical Elective[3]	3
Math/Science/Technical Elective[3]	3

[1]CHE 201/4 and CHE 202/5 can be substituted with CHE 221 and CHE 222, respectively

[2]CHE 202/205 can be substituted with an advisor approved 4 credit Math/Science elective

[3]Requires advisor approval

Other BSEET Degree Options

The following options are available (consult the program webpage and your advisor for details):

4+1 BS EET (Oregon Tech) and MS Engineering (Oregon Tech)

4+1 BS EET (Oregon Tech) with MS Applied Physics or Chemistry (University of Oregon)