

## COMPARISON OF REQUIREMENTS:

### Electrical and Computer Engineering Quarters vs Semesters for BS degree

This document summarizes the differences in the requirements for the BSECE degree under the old program (quarters) and new program (semesters). Students may complete their degree either way, quarters or semesters, in both cases using a mix of quarters and semester courses. Students may *not*, however, mix quarter and semester requirements.

For complete details on the requirements for both quarters and semesters, please see ECENG-BS Program Proposal on the department web site. This document is only a summary of the key differences.

#### Electrical Engineering Program of Study

Topic	Quarters	Semesters	Comments
Total hours	196	128	196 Qhrs=130.67 Shrs
Calculus	Math 151, 152, 153, and 254	Math 1151, 1172	Transition between sequences must be planned carefully (see <a href="http://www.math.osu.edu/semesters">http://www.math.osu.edu/semesters</a> )
Differential equations	Math 415	Math 2415	
Linear Algebra	Math 571	Math 2568	
Physics	Physics 131, 132, 133	Physics 1250, 1251	
Chemistry	Chem 121	Chem 1250	
Statistics	Stat 427	Stat 3470	
Freshman Engineering	Engr 181, 182	Engr 1181, 1182	2-qrtr sequence becomes year-long sequence but equivalent number of hours.
Engineering Survey	Engr 100	Engr 1100	Under quarters, Engr 100 is required but does not count toward the degree. Under semesters, Engr 1100 is required and does count

			toward the degree.
Programming	EnGraph 167	CSE 1222	Under quarters, a programming course in either MATLAB or C++ is acceptable. Under semesters, students must take a programming course in C++. (They may take additional programming if desired and count it under Directed Electives.)
Materials	ECE 331 or MSE 2010	--	No materials requirement under semesters. ECE 331 fulfills this requirement for student graduating under quarters requirements.
Engineering Economics	ISE 504	ISE 3040	
ECE Sophomore Core	ECE 205, 206, 209, 261, 301, and 351	(ECE 294.01, 294.02, and 294.03) or (ECE 2000, 2100)	Recommend student take 294.0x sequence where possible during 2011-2012. See tables on sophomore transitions on department web site.
ECE "Tier II"	ECE 265	ECE 2560	
	ECE 311, 312	ECE 3010	Transition course available for students who started sequence under quarters but will finish under semesters
	ECE 323	ECE 3020	
	ECE 331, 432	ECE 3030	Content in EE 331 not related to electronic materials not required under semester requirements. Transition course available.
	ECE 341	ECE 3040	
	ECE 352	ECE 3050	
Engineering Ethics	ECE 481	ECE 3080	
Technical Communications	ECE 582	ECE 3090	Under quarters, communications is combined with some design. Under semesters, technical communications is a course by itself.
Capstone Design	ECE 682	ECE 4900	Under quarters, ECE 682 combined with ECE 582 provided capstone design experience. Under semesters, capstone design is a course by itself.

Breadth	Students take all of “Tier II” courses	Students take all of “Tier II” courses	
Depth	11 hours in one area of concentration , including at least one 700-level course, then either 5 hours in two more areas of concentration or 11 hours in a second area of conc. Must take at least one 700-level course in an 11-hour area.	Six additional hours past the Tier II in at least one domain, including at least one 5000-level course, and at least three additional hours past the Tier II in each of two other domains.	
Labs	At least 7 hours of technical electives must be labs	At least two lab courses past sophomore	Under semesters, credit hours of labs don’t matter. Courses with a lab component count toward this requirement.
Selected core	3 Qhrs from a list		Courses from the quarter selected core may be counted as directed electives under semester requirements
Technical electives	At least 37 Qhrs must be from ECE	At least 16 Shrs must be from ECE	These include courses above under “depth” and labs
Outside Technical Electives	Up to 15 Qhrs, must be from a list, and must be both technical and		

	higher level.		
Directed electives		Up to 15 Shrs; must be from a list	List to include courses required in other engineering majors, premed, business and entrepreneurship, math, statistics, physics and chemistry taught at higher level than required in ECE, other physical or biological science courses (max of 7 hours below 2000 level)

### Computer Engineering Program of Study

Topic	Quarters	Semesters	Comments
Total hours	196	128	196 Qhrs=130.67 Shrs
Calculus	Math 151, 152, 153, and 254	Math 1151, 1172	Material in different order, transition between sequences must be planned carefully (see <a href="http://www.math.osu.edu/semesters">http://www.math.osu.edu/semesters</a> )
Differential Equations	Math 415	Math 2415	
Linear Algebra	Math 571	Math 2568	
Discrete math	Math 366	CSE 2321	
Physics	Physics 131, 132, 133	Physics 1250, 1251	
Chemistry	Chem 121	Chem 1250	
Statistics	Stat 427	Stat 3470	
Freshman Engineering	Engr 181, 182	Engr 1181, 1182	2-qrtr sequence becomes year-long sequence but equivalent number of hours.
Engineering Survey	Engr 100	Engr 1100	Under quarters, Engr 100 is required but does not count toward the degree. Under semesters, Engr 1100 is required and does count toward the degree.
Programming	EnGraph 167	CSE 1222	Under quarters, a programming course in either MATLAB or C++ is acceptable. Under semesters, students must take a programming course in C++. (They may take additional programming if desired and count it under Directed Electives.)

Materials	ECE 331 or MSE 2010	--	No materials requirement under semesters. ECE 331 or MSE 2010 fulfills this requirement for student graduating under quarters requirements.
Engineering Economics	ISE 504	ISE 3040	
ECE Sophomore Core	ECE 205, 206, 209, 261, 301, and 351	(ECE 294.01, 294.02, and 294.03) or (ECE 2000 , 2100)	Recommend student take 294.0x sequence where possible during 2011-2012. See tables on sophomore transitions on department web site.
Microcontrollers	ECE 265	ECE 2560	
Microcontrollers Lab	ECE 567	ECE 3567	
Circuits	ECE 323	ECE 3020	
Systems	ECE 352		
Advanced Digital Devices	ECE 561	ECE 3367	
Computer Architecture Design	ECE 662	ECE 5362	
Software Development	CSE 221,222, and 321	CSE 2221, 2231	
CSE Project	CSE 560 or CSE 3901		No project requirement under semesters.
Operating Systems	CSE 660	CSE 2431	
Advanced Programming in C		CSE 2451	
Engineering Ethics	ECE 481	ECE 3080	
Technical Communications	ECE 582	ECE 3090	Under quarters, communications is combined with some design. Under semesters, technical communications is a course by itself.
Capstone Design	ECE 682	ECE 4900	Under quarters, ECE 682 combined with ECE 582 provided capstone design experience. Under semesters, capstone design is a course by itself.

Breadth	Built into program	Built into program	
Labs	Built into program	Built into program	
Selected core	Not required		Selected Core courses may be counted as Outside Technical Electives (quarters) or Directed Elective (semesters)
Technical electives	At least 15 Qhrs must be from ECE, and 12 from an ECE/CSE pick list	At least 9 Shrs must be from ECE/CSE pick list	These include courses above under “
Outside Technical Electives	Up to 18 Qhrs, must be from a list, and may include some selected core and may include some from CSE/ECE pick list		
Directed electives		Up to 11 Shrs; must be from a list	List to include courses required in other engineering majors, premed, business and entrepreneurship, math, statistics, physics and chemistry taught at higher level than required in ECE, other physical or biological science courses (max of 7 hours below 2000 level)