

# COMPUTER ENGINEERING

## Curriculum Guide effective Fall 2016 ~ North Dakota State University

STUDENT:

ID #:

ADVISOR:

	Fall					Spring				
	Course	Crs	Grade	Gen Ed	Course	Crs	Grade	Gen Ed		
Freshman (<27 crs)	<b>CHEM 121</b>	General Chemistry I	3		S	<b>ECE 111<sup>v</sup></b>	Intro to ECE	3		
	Wellness Elec	0	2	0	W	<b>ENGL 120</b>	College Composition II	3		C
	<b>ECE 173</b>	Intro to Computing	4			<b>MATH 129</b>	Basic Linear Algebra	3		
	<b>ENGL 110</b>	College Composition I	3		C	<b>MATH 166</b>	Calculus II	4		
	<b>MATH 165</b>	Calculus I	4		R	<b>PHYS 251</b>	Univ Physics I	4		S
	<b>UNIV 189</b>	Skills for Success	1		F					
			<b>17</b>					<b>17</b>		
Sophomore (27-59 crs)	<b>EE 206</b>	Circuit Analysis I/lab	4			<b>COMM 110</b>	Fund Public Speaking	3		C
	<b>MATH 265</b>	Calculus III (w/vectors)	4			<b>ECE 320</b>	Electronics I/lab	3		
	<b>CSCI 222</b>	Discrete Math	3			<b>MATH 266</b>	Intro Differential Equations	3		
	<b>ECE 275</b>	Digital Design/lab	4			<b>ECE 374</b>	Computer Org/lab	4		
	Science Lab	0	1	0	L	<b>CSCI 161</b>	Computer Science II	4		
				<b>16</b>					<b>17</b>	
Junior (60 - 89 crs)	<b>CSCI 413</b>	Software Engineering	3			<b>ECE 341</b>	Random Processes	3		
	<b>ECE 343</b>	Signals & Systems	4			<b>ECE 401</b>	Design I (capstone)	1		
	<b>CSCI 474</b>	Operating Syst. Concepts	3			<b>ECE 376</b>	Embedded Systems/lab	4		
	<b>ENGR 402</b>	Engr Ethics/Social Resp	1			<b>CSCI 459</b>	Computer Networks	3		
	<b>ECE 474</b>	Computer Architecture	3			<b>ECE 475</b>	Adv. Digital Design/lab	4		
				<b>14</b>					<b>15</b>	
Senior (90 + crs)	<b>ECE 403</b>	Design II (capstone)	2			<b>ECE 405</b>	Design III (capstone)	3		
	ENGL	Upper Level Writing*	3		C	ECE Elective	or CSCI 467: Alg. Analysis	3		
	ECE Elective		3			Gen Ed Elective <sup>†</sup>	0	3	0	A or B
	Tech Elective		3			Gen Ed Elective	0	3	0	A or B
	Gen Ed Elective <sup>‡</sup>	0	3	0	A or B	Tech Elective		3		
	Gen Ed Elective <sup>‡</sup>	0	3	0	A or B					
			<b>17</b>					<b>15</b>		
<b>TOTAL CREDITS</b>								<b>128</b>		

General Education Electives			
<i>Approved courses listed in the registration schedule centerfold.</i>			
Gen Ed	Course	Crs	Grade
A		3	
A		3	
B		3	
B		3	
D ■	(double-count with A or B above)		
G ●	(double-count with A or B above)		
L		1	
W		2	

### General Education Categories:

- A - Humanities/Fine Arts
- B - Social/Behavioral Sciences
- C - Communication
- D - Cultural Diversity ■
- F - First-Year Experience
- G - Global Perspectives ●
- L - Co-requisite Lab
- R - Quantitative Reasoning
- S - Science & Technology
- W - Wellness

\*Suggested to take either ECON 105, ECON 201, or ECON 202

\*Select from ENGL 320, 321, 324 or 459 to satisfy the Upper Level Writing for General Education

†Suggested to take ENGR 312 and ENGR 311

Students must earn a "C" or better in ECE 173, ECE 275, EE 206, and all required MATH courses, before enrolling in ECE courses listed above in the Junior or Senior years

**ECE Elective:** anv ECE 4xx course<sup>2</sup>. excluding 494 and 496

**Tech Elective:** anv didactic 4xx course from ECE or CSCI<sup>2</sup>. or any of the following: CSCI 336, CSCI 366, CSCI 372, ECE 311, ECE 321, ECE 351, ECE 494, ECE 496 (max 3 hours), ENGR 310, PHYS 252, IME 440, IME 456, IME 460, IME 470

<sup>v</sup>Students must take ECE 111 prior to enrolling in ECE courses listed above in the Junior or Senior years; otherwise, students must take an additional ECE Elective in lieu of ECE 111

<sup>1</sup> Students must have at least a 2.0 GPA in all required EE and ECE courses taken at NDSU, in order to graduate. Elective ECE courses are not included in this GPA requirement  
<sup>2</sup> See <http://bulletin.ndsu.edu/course-catalog/descriptions/ece/> and <http://bulletin.ndsu.edu/course-catalog/descriptions/csci/> for the full list of ECE and CSCI courses, respectively

# **COMPUTER ENGINEERING ELECTIVES**

## **1510-1530**

**TECH ELECTIVES:** any didactic 4xx-level course from ECE or CSCI, or any of the following:

CSCI 335  
CSCI 336  
CSCI 366  
CSCI 372  
ECE 311  
ECE 321\*\*  
ECE 351  
ECE 494  
ECE 496 (max 3 credits)  
Engr 310  
PHYS 252  
IME 440  
IME 456  
IME 460  
IME 470

\*\* If you have already taken ECE 321 when it was a 5-credit course, only 3 credits are needed for CpE majors. The remaining 2 credits will count towards the 6-credit Tech Elective requirement. The new ECE 321 is 2 credits as of Fall 2014. -

## **ECE ELECTIVES FOR COMPUTER ENGINEERING MAJORS**

Any ECE 4xx-level course, **excluding** ECE 494 and ECE 496.

# Computer Engineering Curriculum Flowchart

