

ELECTRICAL ENGINEERING

Curriculum Guide effective Fall 2013 ~ North Dakota State University

STUDENT:

ID #:

ADVISOR:

	Fall					Spring				
	Course	Crs	Grade	Gen Ed	Course	Crs	Grade	Gen Ed		
Freshman (<27 crs)	CHEM 121	General Chemistry I	3		S	ECE 173	Intro to Computing	3		
	ECE 111	Intro to ECE	3		W	ENGL 120	College Composition II	3		C
	ECE 275	Digital Systems I	3			MATH 129	Basic Linear Algebra	2		
	ENGL 110	College Composition I	3		C	MATH 166	Calculus II	4		
	MATH 165	Calculus I	4		R	PHYS 251	Univ Physics I	4		S
	UNIV 189	Skills for Success	1		F					
		17				16				
Sophomore (27-59 crs)	EE 206	Circuit Analysis I/lab	4			COMM 110	Fund Public Speaking	3		C
	MATH 265	Calculus III (w/vectors)	4			ECE 311	Circuit Analysis II/lab	4		
	PHYS 252	Univ Physics II	4		S	MATH 266	Intro Differential Equations	3		
	Engr Sci Elect		3			Engr Sci Elect		3		
	Science Lab	0	1	0	L	Wellness Elect	0	2	0	W
			16				15			
Junior (60 - 89 crs)	ECE 321	Electronics I/Lab	5			ECE 341	Random Processes	3		
	ECE 343	Signals & Systems	4			ECE 401	Design I (capstone)	1		
	ECE 351	Applied EM/lab	4			EE Core w/Lab		4		
	Gen Ed Elective	0	3	0	A or B	EE Electr Elec		3		
						Math/Science		3		C
						ENGL		3		
		16				17				
Senior (90 + crs)	ECE 403	Design II (capstone)	2			ECE 405	Design III (capstone)	3		
	ENGR 402	Engr Ethics/Social Resp	1			EE Core w/Lab		4		
	EE Core w/Lab		4			EE Elective		3		
	EE Elective		3			Gen Ed Elective	0	3	0	A or B
	EE/Engr Sci Elec		3			Gen Ed Elective	0	3	0	A or B
	Gen Ed Elective	0	3	0	A or B					
		16				16				
TOTAL CREDITS						129				

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

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

A grade of "C" is required in ECE 173, ECE 275, EE 206 & all required Math

Transfer students: Grades less than "C" in Biology, Chemistry, Computer Science, any engineering discipline class, Math and Physics are not accepted for credit.

ECE Core Classes: ECE 331, ECE 376, ECE 443, ECE 461

Electronics Electives: ECE 421, ECE 423, ECE 425, ECE 429, ECE 437

Electrical Engineering TECH ELECTIVES

Curriculum updated 4/2015

ECE 374	Computer Organization	4
ECE 4xx	Any Didactic 4xx ECE Course ³	3-4
ECE 494	Independent Study (max 6 hours)	3
ECE 496	Field Experience (max 3 hours)	3
ABEN 456	Biobased Energy	3
BIOL 150/150L	General Biology I and Lab*	4
BIOL 220/220L	Human Anatomy and Physiology I and Lab*	4
BIOL 221/221L	Human Anatomy and Physiology II and Lab*	4
BIOL 315/315L	Genetics and Lab*	4
CE 309/310	Fluid Mechanics and Lab*	4
CE/ME 486	Nanotechnology and Nanomaterials	3
CHEM 122/122L	General Chemistry II and Lab*	4
CHEM 341/341L	Organic Chemistry I and Lab*	4
CHEM 342/342L	Organic Chemistry II and Lab*	4
CHEM 364	Physical Chemistry I	3
CHEM 365/471	Physical Chemistry II and Lab*	5
CHEM 425/429	Inorganic Chemistry I and Lab*	5
CSCI 161	Computer Science II	4
CSCI 222	Discrete Mathematics	3
CSCI 336	Theoretical Computer Science II	3
CSCI 366	Files for D-Base Systems	3
CSCI 372	Comparative Languages	3
CSCI 426	Introduction to Artificial Intelligence	3
CSCI 458	Microcomputer Graphics	3
CSCI 459	Foundations of Computer Networks	3
CSCI 467	Algorithm Analysis	3
CSCI 474	Operating Systems Concepts	3
CSCI 475	Operating Systems Design	3
CSCI 477	Object-Oriented Systems	3
ENGR 310	Entrepreneurship for Engineers and Scientists	3

IME 440	Engineering Economy	3
IME 456	Program & Project Management	3
IME 461	Quality Assurance & Control	3-4
MATH 270	Introduction to Abstract Math	3
MATH 420	Abstract Algebra I	3
MATH 421	Abstract Algebra II	3
MATH 429	Linear Algebra	3
MATH 450	Real Analysis I	3
MATH 451	Real Analysis II	3
MATH 452	Complex Analysis	3
MATH 480	Applied Differential Equations	3
MATH 481	Fourier Analysis	3
MATH 483	Partial Differential Equations	3
MATH 488	Numerical Analysis I	3
MATH 489	Numerical Analysis II	3
ME 221	Engineering Mechanics I	3
ME 222	Engineering Mechanics II	3
ME 223	Mechanics of Materials	3
ME 350	Thermodynamics & Heat Transfer	3
ME 470	Renewable Energy Technology	3
MICR 445	Animal Cell Culture Techniques	2
PHYS 350	Modern Physics	3
PHYS 360	Modern Physics II	3
PHYS 413	Lasers for Scientists and Engineers	3
PHYS 415	Elements of Photonics	3
PHYS 485	Quantum Mechanics I	3
STAT 450	Stochastic Processes	3
STAT 451	Bayesian Stat Decision Theory	3
STAT 468	Probability & Math Stats II	3
ZOO 460	Animal Physiology	3

¹ In order for the BIOL, CHEM, and CE lecture/lab courses listed above (denoted with a *) to count as an EE Tech Elective, students must take and pass both the lecture and corresponding lab, which are listed together above

² The EE Curriculum requires a minimum of 12 credits of Tech Electives; this may be satisfied by either 3 or 4 of the above courses (i.e., four 3-credit courses or three 4-credit courses)

³ See <http://bulletin.ndsu.edu/course-catalog/descriptions/ece/> for the full list of ECE courses