

ELECTRICAL ENGINEERING

Curriculum Guide effective Fall 2008 ~ North Dakota State University

STUDENT _____

ID # _____

	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			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		
	^UNIV 189	Skills for Success	1		F					
			17					16		
Sophomore (27-59 crs)	EE 206	Circuit Analysis I	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		1		L	Wellness		2		W
			16					15		
Junior (60 - 89 crs)	ECE 321	Electronics I	5			ECE 341	Random Processes	3		
	ECE 343	Signals & Systems	4			ECE 401	Design I (capstone)	1		
	ECE 351	Applied Electromag	4			EE Core w/Lab		4		
	Gen Ed Elective		3		A or B	ECE Electronics		3		
						Math/Science		3		
			16			ENGL	Upper Level Writing*	3		C
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			ECE		3		
	ECE		3			Gen Ed Elective		3		A or B
	ECE-or-Engr Sci		3			Gen Ed Elective		3		A or B
	Gen Ed Elective		3		A or B					
			16					16		
TOTAL CREDITS								129		

Transfer Students:

"T" indicates requirement satisfied with transfer credits.

"IP" indicates a course currently in progress.

Grades less than a "C" in BIOL, CHEM, ENGR, MATH & PHYS transfer courses will not be accepted for credit.

All Students:

No grades less than "C" accepted in ECE 111, 173, 275, EE 206 and required MATH courses.

General Education Electives

Approved courses listed in the registration schedule centerfold.

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.

^UNIV 189 is required for students with fewer than 24 earned transfer credit.

~First year students with a composite ACT score of ≥ 21 should register for ENGL 120 (unless transfer credit for ENGL 120 is received). If ENGL 120 is complete with a grade of "C" or better, three credits will be awarded for ENGL 110 with a passing grade (P). For more details on NDSU's English Placement process, go to www.ndsu.edu/cfwriters.

Electrical Engineering w/Sequences

PROGRAM ELECTIVES *

Curriculum updated 4/2008

NOTES:

* Electives may not be "double-counted" to satisfy more than one requirement.

S Indicates course meets General Education category for Science/Technology.

[] Brackets indicate a cross-listed course.

EE Core Electives w/ Lab		Credits
ECE 331	Energy Conversion	4
ECE 376	Embedded Systems	4
ECE 443	Communications I	4
ECE 461	Control Systems	4

ECE Electronics Electives		Credits
ECE 421	Communication Circuits	3
ECE 423	VLSI Design	3
ECE 425	Intro to Semi Conductor Devices	3
ECE 437	Power Electronics	3

ECE Electives		Credits
ECE 331	Energy Conversion	4
ECE 373 [CSCI]	Assembly Programming	4
ECE 374 [CSCI]	Computer Organization	3
ECE 375	Digital System Design & Implementation	3
ECE 376	Embedded Systems	4
ECE 411	Optics/Scientists & Engineers	3
ECE 417	Optical Signal Transmission	3
ECE 421	Communications Circuits	3
ECE 423	VLSI Design	3
ECE 425	Intro to Semiconductor Devices	3
ECE 431	Power Systems	3
ECE 433	Power Systems Design	3
ECE 437	Power Electronics	3
ECE 443	Communications I	4
ECE 444	Applied Digital Signal Processing	3
ECE 445	Communications II	3
ECE 453	Signal Integrity	3
ECE 455	Des for Electromagnetic Compatibility	3
ECE 461	Control Systems	4
ECE 463	Digital Control	3
ECE 470	Digital Systems II	3
ECE 471	Computer Sys Design & Implementation	3
ECE 483	Instrumentation for Engineers	3
ECE 485	Biomedical Engineering	3
ECE 487	Cardiovascular Engineering	3
ECE 494	Individual Study	3
ECE 496	Field Exp (max credits allowed = 3)	3
ECE 499	Special Topics	3

Math/Science Electives		Credits
S BIOL 150	General Biology I	3
S CHEM122	General Chemistry II	3
CHEM 341	Organic Chemistry I	3
CHEM 364	Physical Chemistry I	4
CSCI 222	Discrete Mathematics	3
CSCI 335	Theoretical Computer Science I	3
CSCI 336	Theoretical Computer Science II	3
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
PHYS 350	Modern Physics	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

Engineering Science Electives		Credits
CE 309	Fluid Mechanics	3
CE 310	Fluid Mechanics Lab	1
CSCI 161	Computer Science II	4
CSCI 366	Files for Database Systems	3
CSCI 372	Comparative Programming 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
IME 440	Engineering Economy	2-4
IME 456	Program & Project Management	3
IME 461	Quality Assurance & Control	3-4
ME 221	Engineering Mechanics I	3
ME 222	Engineering Mechanics II	3
ME 223	Mechanics of Materials	3
ME 350	Thermodynamics & Heat Transfer	3
PHYS 415	Elements of Photonics	3