

COMPUTER 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 E & C Engr	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	Science Lab		1		L
			17					17		
Sophomore (27-59 crs)	CSCI 222	Discrete Math	3			COMM 110	Fund Public Speaking	3		C
	EE 206	Circuit Analysis I	4			CSCI 161	Comp Science II	4		
	MATH 265	Calculus III (w/vectors)	4			ECE 311	Circuit Analysis II w/Lab	4		
	PHYS 252	Univ Physics II	4		S	MATH 266	Intro Differential Equations	3		
	ME 221	Engineering Mech I	3			Gen Ed Elective		3		A or B
			18					17		
Junior (60 - 89 crs)	ECE 321	Electronics I	5			ECE 341	Random Processes	3		
	ECE 343	Signals & Systems	4			ECE 373	Assembly Programming	3		
	ECE 351	Applied Electromag	4			ECE 376	Embedded Syst w/Lab	4		
	Gen Ed Elective		3		A or B	ECE 401	Design I (capstone)	1		
						CprE Core Elec		3		
						ENGL	Upper Level Writing*	3		C
			16					17		
Senior (90 + crs)	CSCI 474	Operating Syst Concepts	3			ECE 405	Design III (capstone)	3		
	ECE 403	Design II (capstone)	2			ENGR 402	Engr Ethics & Soc Resp	1		
	ECE 443	Communications I w/Lab	4			CprE Core Elec		3		
	CprE Core Elec		3			ECE-or-Engr Sci		3		
	Gen Ed Elective		3		A or B	Gen Ed Elective		3		A or B
	Wellness		2		W					
			17					13		

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.

TOTAL CREDITS

132

General Education Electives

Approved courses are listed in the center section of the Registration Schedule published each semester.

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

*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.

Computer Engineering w/Sequences PROGRAM ELECTIVES *

Curriculum updated 4/2008

CprE Core Electives		Crs
ECE 374 (CSCI)	Computer Organization	3
ECE 375	Digital System Design & Implementation	3
ECE 423	VLSI Design	3
ECE 470	Digital Systems II	3

ECE Electives		Crs
ECE 331	Energy Conversion	4
ECE 374 (CSCI)	Computer Organization	3
ECE 375	Digital System Design & Implementation	3
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 444	Applied Dig Signal Proc & Filtering	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

Engineering Science Electives			Crs				Crs
CE 309	Fluid Mechanics	3		IME 440	Engineering Economy	2-4	
CE 310	Fluid Mechanics Lab	1		IME 456	Program & Project Management	3	
CSCI 366	Files for Database Systems	3		IME 461	Quality Assurance & Control	3-4	
CSCI 372	Comparative Programming Languages	3		ME 221	Engineering Mechanics I	3	
CSCI 426	Introduction to Artificial Intelligence	3		ME 222	Engineering Mechanics II	3	
CSCI 458	Microcomputer Graphics	3		ME 223	Mechanics of Materials	3	
CSCI 459	Foundations of Computer Networks	3		ME 350	Thermodynamics & Heat Transfer	3	
CSCI 467	Algorithm Analysis	3		PHYS 415	Elements of Photonics	3	
CSCI 475	Operating Systems Design	3					
CSCI 477	Object-Oriented Systems	3					

NOTES:

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

S Indicates course is approved for General Education Science & Technology.

Math/Science Electives		Crs
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 335	Theoretical Computer Science I	3
CSCI 336	Theoretical Computer Science II	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 Statistics II	3