COMPUTER 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			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	Science Lab		1		L
			17					**17**		
Sophomore (27-59 crs)	EE 206	Circuit Analysis I	4			COMM 110	Fund Public Speaking	3		C
	Math 265	Calc III (w/vectors)	4			CSCI 161	Comp Science II	4		
	PHYS 252	Univ Physics II	4			ECE 311	Circuit Analysis II w/Lab	4		
	CSCi 222	Discrete Math	3			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 w/Lab	5			ECE 341	Random Processes	3		
	ECE 343	Signals & Systems w/ Lab	4			ECE 374	Computer Organiz.	3		
	ECE 376	Embedded Sys w/Lab	4			ECE 351	Applied EM 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/Engr Sci E		3			CprE Core Elec		3/4		
	CprE Core Elec		3			ECE 423	VLSI	3		
	Gen Ed Elective		3		A or B	Gen Ed Elective		3		A or B
	Wellness Elec		2		W					
			16					**13/14**		
						TOTAL CREDITS		**131/132**		

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.

Transfer Students:
"T" indicates requirement satisfied with transfer credits.
Transfer courses with grades less than "C" are not accepted in: biology, chemistry, computer science, any engineering class, mathematics or physics.

All students: No grades less than C accepted in ECE 173,ECE 275,EE 206 & all required Math courses
CprE Core Classes: ECE 373,ECE 375,ECE 443, & ECE 470

Computer Engineering w/Sequences

PROGRAM ELECTIVES *

Curriculum updated 3/2007

NOTES:

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

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

CprE Core Electives		Crs
ECE 374 (CSCI)	Computer Org and Architecture	3
ECE 375	Digital System Design & Implementation	3
ECE 423	Digital Electronics	3
ECE 470	Digital Systems II	3

ECE Electives		Crs
ECE 331	Energy Conversion	4
ECE 374 (CSCI)	Computer Org and Architecture	3
ECE 375	Digital System Design & Implementation	3
ECE 421	Communications CircuitsI	3
ECE 423	Digital Electronics	3
ECE 425	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	Electromagnetic Compatibility	3
ECE 417	Optical Signal Transmission	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		Crs
S	BIOL 150	General Biology	3
S	CHEM122	General Chemistry II	3
	CHEM 341	Organic Chemistry I	3
	CHEM 364	Physical Chemistry I	4
	CSci 235	Theoretical Computer Science I	3
	CSci 236	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 401	Engr. Physics I: Fund. Prop. of Solids	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

Engineering Science Electives		Crs				Crs
CE 309	Fluid Mechanics	3		IME 440	Engineering Economy	3
CE 310	Fluid Mechanics Lab	1		IME 456	Program & Project Management	3
CSci 366	Files for D-Base Systems	3		IME 461	Quality Assurance & Control	3-4
CSci 372	Comparative 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	Local Area Networks	3		ME 350	Thermodynamics & Heat Transfer	3
CSci 467	Algorithm Analysis	3		ME 411	Intro. to Nuclear Engineering	3
CSci 475	Operating Systems Design	3		PHYS 415	Elements of Photonics	3
CSci 477	Object-Oriented Systems	3				