

Name: \_\_\_\_\_

**NORTH DAKOTA STATE UNIVERSITY**

College of Engineering and Architecture

T = Transfer Credit

IP = Course is 'In Progress'

ID: \_\_\_\_\_

**Computer Engineering**

Fall 2011

General Education Requirements - 40 Credits Required					Computer Engineering Major				
Course	Number	Course Title	Credits	Grade	Course	Number	Course Title	Credits	Grade
First Year Experience (F)			1 Sem Credit		<b>ECE Courses Required - 45 Credits Required</b>				
UNIV	189 <sup>1</sup>	Skills for Academic Success	1		ECE	111	Introduction to E&C Engineering	3	
Communication (C)			12 Sem Credits		ECE	173	Introduction to Computing	3	
ENGL	110 <sup>2</sup>	College Composition I	3		ECE	275	Digital Systems I	3	
ENGL	120 <sup>2</sup>	College Composition II	3		ECE	311	Circuit Analysis II	4	
COMM	110	Fund of Public Speaking	3		ECE	321	Electronics I	5	
ENGL		Upper Level Writing*	3		ECE	341	Random Processes	3	
Quantitative Reasoning (R)			3 Sem Credits		ECE	343	Signals & Systems	4	
MATH	165	Calculus I	4		ECE	351	Applied Electromagnetics	4	
Science & Technology (S)			10 Sem Credits		ECE	374	Computer Organization	3	
CHEM	121	General Chemistry I	3		ECE	376	Embedded Systems	4	
PHYS	251	University Physics I	4		ECE	401	Design I (capstone)	1	
PHYS	252	University Physics II	4		ECE	403	Design II (capstone)	2	
		Co-Req Lab Requirement	1		ECE	405	Design III (capstone)	3	
Humanities & Fine Arts (A)			6 Sem Credits		ECE	423	VLSI Design	3	
			3		<b>MATH Courses Required - 13 Credits Required</b>				
			3		MATH	129	Basic Linear Algebra	2	
Social & Behavioral Sciences (B)			6 Sem Credits		MATH	166	Calculus II	4	
			3		MATH	265	Calculus III (w/ vectors)	4	
			3		MATH	266	Intro to Differential Equations	3	
Wellness (W)			2 Sem Credits		<b>CSCI Courses Required - 10 Credits Required</b>				
			2		CSCI	161	Computer Science II	4	
Cultural Diversity (D)					CSCI	222	Discrete Math	3	
					CSCI	474	Operating System Concepts	3	
Global Perspectives (G)					<b>Other Courses Required - 8 Credits Required</b>				
					EE	206	Circuit Analysis I	4	
*Select from ENGL 320, 321, 324 or 459 to satisfy the Upper Level Writing for General Education.					ENGR	402	Engineering Ethics & Social Respon	1	
					ME	221	Engineering Mechanics I	3	
					<b>CprE Core Electives - 9 Credits Required</b>				
CprE Core Classes: ECE 373, 375, 443, 470 (backside)								3	
								3	
								3	
<b>TRANSFER STUDENTS:</b> Transfer courses with grades less than a 'C' in Biology, Chemistry, Computer Science, Mathematics, Physics, and any type of engineering class will not be accepted for major credit.					<b>ECE or Engineering Science Electives - 3 Credits Required</b>				
					Select from Courses listed on the backside of this guide				
								3	
<b>ALL STUDENTS:</b> Students are required to attain a grade of 'C' or better in ECE 173, 275, EE 206, and all required MATH courses.					<b>Total Credits Required for Graduation: 131</b>				

<sup>1</sup>Students transferring in 24 or more credits do not need to take UNIV 189.<sup>2</sup>ACT score of  $\geq 21$  will determine English placement and the awarding of credit. Refer to English placement guidelines for additional information.

## Computer Engineering w/Sequences PROGRAM ELECTIVES \*

Curriculum updated 5/2011

CprE Core Electives		Crs
ECE 373	Assembly Programming	3
ECE 375	Digital System Design & Implementation	3
ECE 443	Communication I	4
ECE 470	Digital Systems II	3

ECE Electives		Crs
ECE 331	Energy Conversion	4
ECE 373	Assembly Programming	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 424	Analog VLSI	3
ECE 425	Intro to Semiconductor Devices	3
ECE/IME 427	Packaging for Electronics	3
ECE 429	Introduction to IC Fabrication	3
ECE 431	Power Systems	3
ECE 432	Comput .Methods in Power Systems	3
ECE 433	Power Systems Design	3
ECE 437	Power Electronics	3
ECE 438	Electric Drives	4
ECE 443	Communications II	4
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 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 ( <b>max credits allowed = 3</b> )	3
ECE 499	Special Topics	3

### NOTES:

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

Engineering Science Electives		Crs
CE 309	Fluid Mechanics	3
CE 310	Fluid Mechanics Lab	1
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 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 222	Engineering Mechanics II	3
ME 223	Mechanics of Materials	3
ME 350	Thermodynamics & Heat Transfer	3
PHYS 413	Lasers for Scientists & Engineers	3
PHYS 415	Elements of Photonics	3