Computer Engineering 2014

Major: Computer Engineering

Degree Type: B.S.Cpr.E.

Required Degree Credits to Graduate: 126[†]

General Education Requirements

First Year Experience (F):

UNIV 189	Skills For Academic Success (Students transferring in 24 or more credits do not need to take UNIV 189.)	1
Communication (C):		
ENGL 110	College Composition I	3
ENGL 120	College Composition II	3
Select one of the following:		3
ENGL 320	Business and Professional Writing	
ENGL 321	Writing in the Technical Professions	
ENGL 324	Writing in the Sciences	
ENGL 459	Researching and Writing Grants and Proposal	
COMM 110	Fundamentals of Public Speaking	3
Quantitative Reasoning (R):		
MATH 165	Calculus I	4
Science & Technology (S):		
CHEM 121	General Chemistry I	3
CHEM 121L	General Chemistry I Laboratory	1
or PHYS 251L	University Physics I Laboratory	
PHYS 251	University Physics I	4
Select an additional course from the current general education list		2
Humanities & Fine Arts (A): Select from current general education list		6
Social & Behavioral Sciences (B): Select from current general education list		6
Wellness (W): Select from current general education list		2
Cultural Diversity (D): Select from current general education list		
Global Perspectives (G): Select from current general education list		
Total Credits		41

Major Requirements

General Education Requirements		40
Computer Engineering Core Requirements		
ECE 111	Introduction to Electrical and Computer Engineering	3
ECE 173	Introduction to Computing [*]	3
ECE 275	Digital Design [*]	4
ECE 321	Electronics I [†]	5
ECE 341	Random Processes	3
ECE 343	Signals & Systems	4
ECE 374	Computer Organization and Architecture	4
ECE 375	Digital System Design and Implementation	4
ECE 376	Embedded Systems	4
ECE 401	Design I (capstone)	1
ECE 403	Design II (capstone)	2
ECE 405	Design III (capstone)	3
ECE 474	Computer Architecture	3

Math Courses Required		
MATH 129	Basic Linear Algebra *	2
MATH 166	Calculus II *	4
MATH 265	Calculus III (w/ vectors) *	4
MATH 266	Introduction to Differential Equations *	3
CSCI Courses Required		
CSCI 161	Computer Science II	4
CSCI 222	Discrete Mathematics	3
CSCI 413	Principles of Software Engineering	3
CSCI 459	Foundations of Computer Networks	3
CSCI 474	Operating Systems Concepts	3
Other Courses Required		
EE 206	Circuit Analysis I *	4
ENGR 402	Engineering Ethics and Social Responsibility	1
ECE Electives	**Select 6 cr. of ECE 400 level electives (excluding 494 and 496); may include CSCI 467**	6
	Includes the cross listed courses of ECE/IME 427; ECE/IME 429; ECE/PHYS 411; & ECE/PHYS 411L	
Tech Electives: Select 4 credits from the following:		4
CSCI 335	Theoretical Computer Science I	
CSCI 336	Theoretical Computer Science II	
CSCI 366	Database Systems	
CSCI 372	Comparative Programming Languages	
CSCI 4xx	Course CSCI 4xx Not Found (Any CSCI 400 level didactic course)	
ECE 311	Circuit Analysis II	
ECE 321	Electronics I †	
ECE 351	Applied Electromagnetics	
ECE 4xx	Course ECE 4xx Not Found (Any ECE 400 level didactic course)	
ECE 494	Individual Study	
ECE 496	Field Experience (max. of 3 cr.)	
ENGR 310	Entrepreneurship for Engineers and Scientists	
IME 440	Engineering Economy	
IME 456	Program and Project Management	
IME 460	Evaluation of Engineering Data	
IME 470	Operations Research I	
PHYS 252	University Physics II	
Total Credits		128

* No grade less than a C accepted in these courses.

† ECE 321 is a 5 credit course; 3 credits count in the computer core requirements and the remaining 2 credits may count as tech electives.

Degree Requirements and Notes

- A student must complete at least 60 semester credits of professional level course work in his/her program while in residence and enrolled in the college. Students transferring into the college from programs with professional accreditation are exempt from this residency requirement but are subject to the residency requirement of NDSU.

- Transfer Students – Transfer courses with grades less than 'C' in Biology, Chemistry, Computer Science, Mathematics, Physics, and any type of engineering class will not be accepted as a major requirement.

- All Students – Students are required to attain a grade of 'C' or better in ECE 173 Introduction to Computing, ECE 275 Digital Design, EE 206 Circuit Analysis I, and all required MATH courses.