

# COMPUTER ENGINEERING

B.S. Degree Requirements  
134 Credits

## GENERAL REQUIREMENTS

### COMMUNICATIONS: - (9)

WRTG 111X (3) \_\_\_\_\_  
WRTG 211X, 212X, 213X, OR 214X (3) one required  
COJO 131X OR 141X (3) \_\_\_\_\_

### ARTS, HUMANITIES, SOCIAL SCIENCES, ETHICS: - (18 – 22)

Complete 6 courses from the list given in the catalog under Summary of Bachelor's Degree Requirements, in the following categories: (to access, go to:

<https://goo.gl/8W1S1u> or  
<http://catalog.uaf.edu/bachelors/summary-of-bachelors-degree-reqs/>  
and click on Bachelor of Science)

Arts (3) \_\_\_\_\_  
Humanities (3-5) \_\_\_\_\_  
Social Sciences (3) \_\_\_\_\_  
Social Sciences (3) \_\_\_\_\_  
Arts, Humanities or Social Sciences (3-5) \_\_\_\_\_  
Ethics (3) \_\_\_\_\_

### MATHEMATICS: - (18)

MATH 251X (4) \_\_\_\_\_ MATH 302 (3) \_\_\_\_\_  
MATH 252X (4) \_\_\_\_\_ MATH 307 (3) \_\_\_\_\_  
MATH 253X (4) \_\_\_\_\_

### NATURAL SCIENCE: - (16)

CHEM 105X (4) \_\_\_\_\_  
PHYS 211X (4) \_\_\_\_\_  
PHYS 212X (4) \_\_\_\_\_  
CHEM 106X OR Phys 213X (4) \_\_\_\_\_

### LIBRARY INFORMATION & RESEARCH: - (0 – 1)

LS competency test \_\_\_\_\_ OR  
LS 101X (1) \_\_\_\_\_

COMPLETE 2 DESIGNATED (W) COURSES AND  
1 DESIGNATED (O) COURSE OR 2 COURSES  
DESIGNATED (O/2) AT THE UPPER DIVISION LEVEL:

\_\_\_\_\_ (W) AND \_\_\_\_\_ (W)  
\_\_\_\_\_ (O) OR  
\_\_\_\_\_ (O/2) AND \_\_\_\_\_ (O/2)

### UPPER DIVISION CREDITS: - (39)

Transfer Credits \_\_\_\_\_  
UAF Credits (24)\* \_\_\_\_\_  
TOTAL TO DATE: \_\_\_\_\_  
TO BE COMPLETED: \_\_\_\_\_

\*a minimum of 24 UAF credits

(CMER)

PLEASE NOTE: Grades of 'C-' or better are required for all courses.

## MAJOR REQUIREMENTS:

A. Complete the following: - (64)

CS 201 (3) \_\_\_\_\_  
CS 202 (3) \_\_\_\_\_  
CS 301 (3) \_\_\_\_\_  
CS 311 (3) \_\_\_\_\_  
CS 321 (3) \_\_\_\_\_  
CS 331 (3) \_\_\_\_\_  
EE 102 (3) \_\_\_\_\_  
EE 203 (4) \_\_\_\_\_  
EE 204 (4) \_\_\_\_\_  
EE 311 (3) \_\_\_\_\_  
EE 331 (1) \_\_\_\_\_  
EE 333 (4) \_\_\_\_\_ (W)  
EE 343 (4) \_\_\_\_\_  
EE 353 (3) \_\_\_\_\_  
EE 354 (3) \_\_\_\_\_  
EE 443 (4) \_\_\_\_\_  
EE 444 (4) \_\_\_\_\_ (W, O)  
EE 463 (3) \_\_\_\_\_  
ES 101 (3) \_\_\_\_\_  
ESM 450 (3) \_\_\_\_\_ (W)

B. Complete 6 300/400-level credits of approved electives. The following are recommended:

EE 334 (4) \_\_\_\_\_ CS 361 (3) \_\_\_\_\_  
EE 434 (4) \_\_\_\_\_ (W,O) CS 411 (3) \_\_\_\_\_  
EE 451 (4) \_\_\_\_\_ CS 421 (3) \_\_\_\_\_ (W)  
EE 461 (4) \_\_\_\_\_  
EE 471 (3) \_\_\_\_\_

Or EE 6XX and CS 3xx and 4xx courses approved by dept. advisor (3-4) \_\_\_\_\_

C. Complete 3 credits of approved engineering science from the following:

ES 208 (4) \_\_\_\_\_  
ES 331 (3) \_\_\_\_\_  
ES 341 (4) \_\_\_\_\_  
ES 346 (3) \_\_\_\_\_  
ME 334 (3) \_\_\_\_\_

D. Complete the Fundamentals of Engineering Exam: \_\_\_\_\_

Credits for core/general requirements:	61 – 62
Credits required for major:	<u>73</u>
Total credits required for degree	134

## BACHELOR OF SCIENCE IN COMPUTER ENGINEERING

### First Year: Fall

WRTG 111X	Writing Across Contexts	3	
MATH 251X	Calculus I	4	
ES 101	Intro to Engineering	3	
CHEM 105	General Chemistry	4	
	Arts, Hum, Soc Sci, Ethics (1 of 6)	<u>3</u>	
		<b>17</b>	

### First Year: Spring

COJO 131X or COJO 141X		3	
MATH 252X	Calculus II	4	
EE 102	Intro to Electrical & Computer Engr.	3	
CHEM 106	General Chemistry	4	
	Arts, Hum, Soc Sci, Ethics (2 of 6)	<u>3</u>	
		<b>17</b>	

### Second Year: Fall

MATH 253X	Calculus III	4	
PHYS 211	General Physics	4	
WRTG 211X/212X/213X/214X (one required)		3	
CS 201	Computer Science I	3	
EE 203	Fundamentals of Electrical Engr. I	<u>4</u>	
		<b>18</b>	

### Second Year: Spring

MATH 302	Differential Equations	3	
PHYS 212	General Physics	4	
EE 204	Fundamentals of Electrical Engineering II	4	
CS 202	Computer Science II	3	
	Arts, Hum, Soc Sci, Ethics (3 of 6)	3	
LS 101X	Library Info and Research	<u>1</u>	
		<b>18</b>	

### Third Year: Fall

EE 333W	Physical Electronics	4	
EE 343	Digital Systems Analysis and Design	4	
EE 353	Circuit Theory	3	
CS 301	Assembly Language Programming	3	
	Arts, Hum, Soc Sci, Ethics (4 of 6)	<u>3</u>	
		<b>17</b>	

### Third Year: Spring

MATH 307	Discrete Mathematics	3	
EE 354	Engineering Signal Analysis	3	
EE 443	Computer Engineering Anal. and Design	4	
CS 321	Operating Systems	3	
	Arts, Hum, Soc Sci, Ethics (5 of 6)	<u>3</u>	
		<b>16</b>	

### Fourth Year: Fall

EE 311	Applied Engineering Electromagnetics	3	
EE 331	High Frequency Lab	1	
CS 311	Data Structures and Algorithms	3	
	Approved Engineering Science Elective	3	
	Approved EE or CS Elective	3	
	Arts, Hum, Soc Sci, Ethics (6 of 6)	<u>3</u>	
		<b>16</b>	

### Fourth Year: Spring

ESM 450	Econ. Analysis & Operations	3	
EE 463	Communication Networks	3	
EE 444WO	Embedded Systems Design	4	
CS 331	Programming Languages	3	
	Approved EE or CS Elective	3	
	Take the Fundamentals of Engr. Exam	<u>3</u>	
		<b>16</b>	

<u>EE or CS Electives - choose 2</u>	<u>ES Elective - choose 1</u>
EE 334	ES 208
EE 434	ME 334
EE 451	ES 346
EE 461	ES 331 has ES prerequisites
EE 464	ES 341 has ES prerequisites
EE 471	
CS 361	
CS 411	
CS 421	
Or EE 6XX and CS 3xx and 4xx courses approved by dept. advisor	