

COMPUTER ENGINEERING

B.S. Degree Requirements
127 Credits

GENERAL REQUIREMENTS (61 – 67)

COMMUNICATIONS: - (9)

WRTG 111X (3) _____
WRTG 211X OR 213X (3) _____
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: - (56)

CS 201 (3) _____
CS 202 (3) _____
CS 301 (3) _____
CS 311 (3) _____
CS 321 (3) _____
EE 102 (3) _____
EE 203 (4) _____
EE 243 (4) _____
EE 253 (3) _____
EE 333 (4) _____ (W)
EE 354 (3) _____
EE 443 (4) _____
EE 444 (4) _____
EE 451 (4) _____
EE 461 (4) _____
ES 100X (3) _____
ES 100L (1) _____

B. Complete Senior Capstone Design: - (4)

EE 481 (1) (W, O) _____
EE 482 (3) (W, O) _____

C. Complete 6 300/400-level credits of approved EE or CS electives. The following are recommended: - (6-8)

EE 303 (3) _____ CS 331 (3) _____
EE 311 (4) _____ CS 361 (3) _____
EE 334 (4) _____ CS 411 (3) _____
EE 412 (3) _____ CS 421 (3) _____
EE 451 (4) _____
EE 471 (3) _____

Graduate 600-level EE and CS credits may also be used upon approval as EE and CS electives. _____

D. Complete the Fundamentals of Engineering Exam: _____

Credits for core/general requirements:	61 – 67
Credits required for major:	66 – 68
Total credits required for degree	127

BACHELOR OF SCIENCE IN COMPUTER ENGINEERING

Degree Plan (127 Credits)

FIRST YEAR: FALL

WRTG 111X	Writing Across Contexts	3
Math 251X	Calculus I	4
ES 100X	Engineering AK-Intro to Engineering	3
ES 100L	Makerspace AK-Lab for Intro to Engr	1
CHEM 105	General Chemistry I	4
	Arts, Hum, Soc Sci, Ethics (1 of 6)	<u>3</u>
		18

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 II	4
	Arts, Hum, Soc Sci, Ethics (2 of 6)	<u>3</u>
		17

SECOND YEAR: FALL

MATH 253X	Calculus III	4
EE 203	Electric Circuits (Circuits I)	4
EE 243	Digital Systems Design	4
CS 201	Computer Science I	3
WRTG 211X/12X/13X/14X		<u>3</u>
		18

SECOND YEAR: SPRING

MATH 302	Differential Equations	3
EE 253	Circuit Theory (Circuits II)	3
CS 202	Computer Science II	3
	Arts, Hum, Soc Sci, Ethics (3 of 6)	3
LS 101X	Library Info and Research	<u>0-1</u>
		16-17

THIRD YEAR: FALL

PHYS 211	General Physics	4
EE 333	Electronic Devices	4
EE 354	Engineering Signal Analysis	3
CS 301	Assembly Language Programming	3
	Arts, Hum, Soc Sci, Ethics (4 of 6)	<u>3</u>
		13

THIRD YEAR: SPRING

MATH 307	Discrete Mathematics	3
PHYS 212	General Physics	4
EE 443	Computer Engr Analysis and Design	4
EE 444	Embedded Systems Design	4
CS 321	Operating Systems	<u>3</u>
		18

FOURTH YEAR: FALL

EE 451	Digital Signal Processing	4
EE 481	ECE Design I	1
CS 311	Data Structures and Algorithms	3
	Approved EE or CS Elective	3-4
	Arts, Hum, Soc Sci, Ethics (5 of 6)	<u>3</u>
		14-15

FOURTH YEAR: SPRING

EE 461	Communication Systems and Networks	4
EE 482	ECE Design II	3
	Approved EE or CS Elective	3-4
	Arts, Hum, Soc Sci, Ethics (6 of 6)	3
	Take the Fundamentals of Engr. Exam	<u>3</u>
		13-14

Gray shading means added or revised course.

Notes:

- 1) EE 204 (4), EE 311 (3), EE 331 (1), and ES elective (3 or 4) removed.
- 2) EE 243 (previously EE 343) revised and moved to fall of sophomore year; also BSEE core requirement.
- 3) EE 353 (now EE 253 with EE 203; MATH 252; ES or CS 201 as prereqs) moved to spring of second year.
- 4) EE 443 offered every spring for BSCpE students but can also serve as an approved EE elective for BSEE students.
- 5) EE 444 (previously the senior capstone design elective) restructured and offered in spring of junior year as a BSEE and BSCpE core requirement.
- 6) EE 461 content revised and becomes core course in BSEE and BSCpE program.
- 7) EE 303 and EE 311 added as approved electives.
- 8) Senior Capstone Design I (1) and Senior Capstone Design II (3) format added in fall and spring of senior year to replace previous one semester design elective format. This will be the same course sequence for BSEE students.
- 9) ABET: 30 credits of math and science w/ labs; 45 credits of engineering and CS appropriate to the program.

Yellow shading means see notes with yellow shading.

Green shading means new course.

Approved EE and CS Electives (Offered on a rotating basis.)

EE 303	Electric Power Systems and Machines	4
EE 311	Engineering Electromagnetics	3
EE 334	Electronic Circuit Design	4
EE 464	Advanced Communication Systems	4
EE 471	Automatic Control	3
CS 331	Programming Languages	3
CS 361	Sys Security and Adm	3
CS 411	Analysis of Algorithms	3
CS 421	Dist. Operating Systems	3

Graduate level EE and CS courses may be used as electives upon approval.