ELECTRICAL ENGINEERING

B.S. Degree Requirements
125 Credits

GENERAL REQUIREMENTS (58 – 63**)**

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: - (15)
Math 251X (4) _____ Math 253X (4) _____
Math 252X (4) _____ Math 302 (3) _____

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

(ELEE)

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

MAJOR REQUIREMENTS:

*A. Complete the following EE core: - (**47**)*

EE 102 (3) _____
EE 203 (4) _____
EE 243 (4) _____
EE 253 (3) _____
EE 301 (3) _____
EE 303 (4) _____
EE 311 (3) _____
EE 331 (1) _____
EE 333 (4) (W) _____
EE 354 (3) _____
EE 444 (4) _____
EE 451 (4) _____
EE 461 (4) _____
EE 471 (3) _____

*B. Complete Senior Capstone Design: - (**4**)*

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

*C. Complete the following: - (**7**)*

ES 100X (3) _____
ES 100L (1) _____
ES 201 (3) _____

*D. Complete at least **9 300/400-level credits (3 courses)** of following approved EE electives. The following are recommended: - (**9**-12)*

EE 334 (4) _____
EE 412 (3) _____
EE 404 (4) _____
EE 406 (4) _____
EE 408 (4) _____
EE 443 (4) _____
EE 464 (3) _____

*Graduate **600-level EE credits** may also be used upon approval as EE electives.*

E. Complete the Fundamentals of Engineering Exam: _____

Credits for core/general requirements:	**58** – 63
Credits required for major:	**67** – 70
Total credits required for degree	**125**

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BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING
Degree Plan (125 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)	3
		18

Second Year: Fall

Math 253X	Calculus III	4
Phys 211X	General Physics I	4
EE 243	Digital Systems Design	4
EE 203	Electric Circuits (Circuits I)	4
LS 101X	Library Info and Research	0-1
		16-17

Third Year: Fall

EE 303	Electric Power Systems and Machines	4
EE 311	Applied Eng. Electromagnetics	3
EE 331	High Frequency Lab	1
EE 333	Electronic Devices	4
EE 354	Engineering Signal Analysis	3
		15

Fourth Year: Fall

EE 451	Digital Signal Processing	4
EE 481	ECE Design I	1
	Approved EE Elective	3-4
	Arts, Hum, Soc Sci, Ethics (3 of 6)	3
	Arts, Hum, Soc Sci, Ethics (4 of 6)	3
		14-15

Notes:

1) EE 204 (4), EE 334 (4), EE 412/432, two ES electives (6 or 8), and Math elective (3) removed as core requirements.
2) EE 301 E&CE Math (3) added as core requirement.
3) EE 243 (previously EE 343) moved to fall of sophomore year; offered in same semester as BSCpE core requirement.
4) EE 353 (now EE 253 with EE 203; MATH 252; ES or CS 201 as prereqs) moved to spring of second year to follow in sequence with EE 203.
5) EE 303 title changed, and power systems content added.
6) EE 444 and EE 461 content revised and become core requirements for BSEE in previous concentration areas.
7) EE 443 offered every fall for BSCpE students but can also serve as an approved EE elective for BSEE students.
8) Senior Capstone Design I (1) and Senior Capstone Design II (3) format added in fall and spring of fourth year to replace previous one semester design elective format with same course sequence for all BSEE and BSCpE students.
9) EE 334, EE 412, EE 404, EE 406, EE 408, EE 443, and EE 464 become elective course not offered every year in the BSEE program.
10) Yellow shading means see notes with yellow shading.
11) Green shading means new course.
12) Gray shading means added or revised course.

First Year: Spring

COJO 131X or 141X	Oral Communication	3
Math 252X	Calculus II	4
EE 102	Intro to Electrical & Computer Engr.	3
ES 201	Computer Techniques	3
Chem 106	General Chemistry II	4
		17

Second Year: Spring

Math 302	Differential Equations	3
Phys 212X	General Physics II	4
EE 253	Circuit Theory (Circuits II)	3
EE 301	EE Math (Anlyt Methods for ECE)	3
WRTG 211X/12X/13X/14X		3
		16

Third Year: Spring

EE 444	Embedded Systems Design	4
EE 461	Communications Systems and Networks	4
EE 471	Automatic Control	3
	Approved EE Elective	3-4
	Arts, Hum, Soc Sci, Ethics (2 of 6)	3
		17-18

Fourth Year: Spring

EE 482	ECE Design II	3
	Approved EE Elective	3-4
	Arts, Hum, Soc Sci, Ethics (5 of 6)	3
	Arts, Hum, Soc Sci, Ethics (6 of 6)	3
	Take the Fundamentals of Engr. Exam	
		12-13

Approved EE Electives (Offered on a rotating basis.)

EE 334	Electronic Circuit Design	4
EE 404	Electric Power Systems Analysis	4
EE 406	Electric Power Prot. and Cont. Systems	4
EE 408	Power Electronics Design	4
EE 412	Electromagnetic Waves and Devices	3
EE 443	Computer Engr Analysis and Design	4
EE 464	Advanced Communication Systems	4

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

EE 607	Electric Motor Drives	3
EE 609	Ren. & Sus. Energy Systems	3
EE 646	Wireless Sensor Networks	3
EE 654	UAS Systems Design	3
EE 656	Aerospace Systems Design	3
EE 662	Digital Communications Theory	3
EE 663	Computational Electromagnetics	3
EE 671	Digital Control Systems	3

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