

# B.S., ELECTRICAL ENGINEERING

**Concentrations: Communications, Computer Engineering, Power and Control**

## Minimum Requirements for Degree: 135 credits

Students must earn a C- grade or better in each course.

Code	Title	Credits
<b>General University Requirements</b>		
Complete the general university requirements. ( <a href="http://catalog.uaf.edu/bachelors">http://catalog.uaf.edu/bachelors</a> )		
<b>General Education Requirements</b>		
Complete the general education requirements. ( <a href="http://catalog.uaf.edu/bachelors/general-education-requirements">http://catalog.uaf.edu/bachelors/general-education-requirements</a> )		
As part of the general education requirements, complete:		
CHEM F105X and CHEM F106X or PHYS F213X	General Chemistry I and General Chemistry II Elementary Modern Physics	
MATH F251X	Calculus I	
<b>B.S. Degree Requirements</b>		
Complete the B.S. degree requirements. ( <a href="http://catalog.uaf.edu/bachelors/summary-of-bachelors-degree-reqs/#bachelorofsciencetext">http://catalog.uaf.edu/bachelors/summary-of-bachelors-degree-reqs/#bachelorofsciencetext</a> )		
As part of the B.S. degree requirements, complete:		
MATH F252X	Calculus II	
PHYS F211X	General Physics I	
PHYS F212X	General Physics II	
<b>Program Requirements</b>		
EE F102	Introduction to Electrical and Computer Engineering	3
EE F203	Electric Circuits	4
EE F204	Electrical Engineering Fundamentals II	4
EE F303	Electrical Machinery	4
EE F311	Engineering Electromagnetics I	3
EE F331	High-frequency Lab	1
EE F333	Electronic Devices	4
EE F334	Electronic Circuit Design	4
EE F343	Digital Systems Analysis and Design	4
EE F353	Circuit Theory	3
EE F354	Engineering Signal Analysis	3
EE F471	Automatic Control	3
ES F101	Introduction to Engineering	3
ES F201	Computer Techniques	3
ES F208	Mechanics	4
ESM F450	Economic Analysis and Operations	3
MATH F253X	Calculus III	4
MATH F302	Differential Equations	3
Approved EE elective		3-4
Approved EE design elective		3-4
Complete one of the following approved engineering science electives:		3

ES F331	Mechanics of Materials	
ES F341	Fluid Mechanics	
ES F346	Introduction to Thermodynamics	
ME F334	Elements of Material Science/ Engineering	
Approved mathematics elective <sup>1</sup>		3

## Capstone Requirement

Complete the baccalaureate capstone requirement as determined by the program. <sup>2</sup>

## Fundamentals of Engineering (FE) Examination

Complete the Fundamentals of Engineering (FE) examination administered by the State of Alaska

## Concentrations

Complete one of the following concentrations:	11-12
Communications	
Computer Engineering	
Power and Control	

- <sup>1</sup> Mathematics elective to be chosen from the following advanced topics: linear algebra and matrices, probability and statistics, partial differential equations, numerical analysis, advanced calculus or complex variables.
- <sup>2</sup> EE F408, EE F444 or EE F464 may fulfill the baccalaureate capstone requirement. These courses may also fulfill approved electrical engineering electives.

## Concentrations COMMUNICATIONS

Code	Title	Credits
Complete the following:		
EE F412	Engineering Electromagnetics II	3
EE F432	Electromagnetics Laboratory	1
EE F461	Communication Systems	4
Complete one of the following approved engineering science electives:		3
ES F331	Mechanics of Materials	
ES F341	Fluid Mechanics	
ES F346	Introduction to Thermodynamics	
ME F334	Elements of Material Science/ Engineering	

## COMPUTER ENGINEERING

Code	Title	Credits
Complete the following:		
EE F443	Computer Engineering Analysis and Design	4
EE F451	Digital Signal Processing	4
EE F461	Communication Systems	4

## POWER AND CONTROL

Code	Title	Credits
Complete the following:		
EE F404	Electrical Power Systems	4
EE F406	Electrical Power Engineering	4

Complete one of the following approved engineering science  
electives: 3

ES F331 Mechanics of Materials

ES F341 Fluid Mechanics

ES F346 Introduction to Thermodynamics

ME F334 Elements of Material Science/  
Engineering

**Note:** Students must plan their elective courses in consultation with their electrical engineering faculty advisor, and all elective courses must be approved by their electrical engineering faculty advisor.