

Course Sequence for the Bachelor of Science in Engineering (BSE) with Specialty in Electrical Engineering

Freshman Year Fall Semester		Lecture	Lab	Credit Hrs.
CHEM A105	General Chemistry I	3		3
CHEM A105L	General Chemistry I Lab		1	1
ENGL A111	Methods of Written Comm.	3		3
ENGR A151	Engineering Practices I	3		3
ENGR A192	Engineering Seminar I	1		1
MATH A200	Calculus I	4		4
Soc Sci/Hum/Fine Arts		3		3
Semester Total				18

Freshman Year Spring Semester		Lecture	Lab	Credit Hrs.
COMM A111	Fund. Oral Comm.	3		3
CSE A205	Intro. to C Programming for Engineers	3		3
ENGL A212	Technical Writing	3		3
ENGR 105A, B	Computer Aided Design I, II,		2	2
ENGR A161	Engineering Practices II	3		3
MATH A201	Calculus II	4		4
Semester Total				18

Sophomore Year Fall Semester		Lecture	Lab	Credit Hrs.
CSE A215	Object Oriented C++ Prog. for Engr.	3		3
EE A203	Fund. of Elect. Engr. I	4		4
ENGR A292	Engineering Seminar II	1		1
MATH A202	Calculus III	4		4
PHYS A211	General Physics I	3		3
PHYS A211L	General Physics I Lab		1	1
Semester Total				16

Sophomore Year Spring Semester		Lecture	Lab	Credit Hrs.
EE A204	Fund. of Elect. Engr. II	4		4
EE A353	Circuit Theory	3		3
ENGR A251	Engineering Practices III	3		3
MATH A302	Ordinary Differential Equations	3		3
PHYS A212	General Physics II	3		3
PHYS A212L	General Physics II Lab		1	1
Semester Total				17

Junior Year Fall Semester		Lecture	Lab	Credit Hrs.
CSE A225	Assembly Language Prog. for Engineers	3		3
EE A314	Electromagnetics I	3		3
EE A354	Engineering Signal Analysis	3		3
ES A208	Mechanics (Statics & Dynamics)	4		4
MATH	Advanced Math Elective	3		3
Semester Total				16

Junior Year Spring Semester		Lecture	Lab	Credit Hrs.
EE A241	Computer Hardware Concepts	3	1	4
EE A324	Electromagnetics II	3		3
EE A324L	Electromagnetics Laboratory II		1	1
ES A302	Engr. Data Analysis	3		3
Soc Sci/Hum/Fine Arts		3		3
Soc Sci/Hum/Fine Arts		3		3
Semester Total				17

Senior Year Fall Semester		Lecture	Lab	Credit Hrs.
EE A441	Integrated Circuit Design	3		3
EE A465	Telecommunications	3		3
	Advanced Engineering/Science Elective	3		3
	Advanced Engineering/Science Elective	3		3
	Soc Sci/Hum/Fine Arts	3		3
Semester Total				15

Senior Year Spring Semester		Lecture	Lab	Credit Hrs.
EE A438	Design of Electrical Engr. Systems	3		3
ESM A450	Economic Analysis & Operation	3		3
	Advanced Engineering/Science Elective	3		3
	Advanced Engineering/Science Elective	3		3
	Soc Sci/Hum/Fine Arts	3		3
	FE Exam (recommended)	0		0
Semester Total				15

Credit Summary

Total for Freshman & Sophomore Years	70
Total for Junior & Senior Years	62
Total Credits for Degree	132

Advanced Mathematics Electives (3 credits)

BSE students are required to take one course from the following list of advanced mathematical elective courses.

MATH A310	Numerical Methods	3
MATH A314	Linear Algebra	3
MATH A321	Analysis of Several Variables	3
MATH A371	Stochastic Processes	3
MATH A407	Mathematical Statistics I	3
MATH A410	Introduction to Complex Analysis	3
MATH A422	Partial Differential Equations	3
MATH A423	Advanced Mathematics for Engineers	3

Electrical Engineering Specialty Electives

Students specializing in Electrical Engineering are required to take 12 credits from the following list of elective courses.

CS A330	Algorithms & Data Structures	3
CS A342	Networks	3
CS A401	Software Engineering	3
CS A413	Computer and Data Security	3
CSE A445	Computer Design & Interfacing	4
CSE A451	Digital Signal Processing	3
CSE A465	Network Security	3
EE/ME A308	Instrumentation & Measurement	3
EE A407	Power Distribution and Control	3

(Only computer simulations, no hardware lab)

EE/ME A408	Dynamics of Systems	3
EE/ME A471	Automatic Control	3
ES A411	Northern Design	3
***ES A411	Northern Design or CE A403/CE A603 Arctic Engineering	3
PHYS A303	Modern Physics	3

***Note: Only one of the following courses may count towards the BSE degree: ES A411, CE A403, or CE A603. Each of these courses satisfies the Arctic engineering course requirement for professional registration by the State of Alaska.