

Electrical Engineering - Aerospace Concentration Science/Math/Engineering Electives (SME)

Course Number	Course Title	Credits	Prerequisites	Terms
BC 351	Principles of Biochemistry	4	BZ110 or BZ120 or LIFE102; CHEM241 or CHEM245 or CHEM341 or CHEM345	F, S, SS
BIOM 100 ¹	Introduction to Biomedical Engineering	1		F
BIOM 200 ¹	Biomedical Engineering Fundamentals	2	LIFE102; MATH160; BIOM100, may be registered concurrently	F
BIOM 382B	Study Abroad-Portugal: Biom Industry and Health	1		S
BMS 300	Principles of Human Physiology	4	BZ101 or BZ110 or LIFE102; CHEM103 or CHEM107 or CHEM111	F, S, SS
BMS 301	Human Gross Anatomy	5	BZ110 or LIFE102	F, S, SS
BMS 325	Cellular Neurobiology	3	BMS300 or BMS360	F
BMS 345	Functional Neuroanatomy	4	BMS300 or BMS360	F, S
BZ 310	Cell Biology	4	BZ110 or BZ120 or LIFE103; CHEM113	F, S, SS
CBE 101 ¹	Introducton to Chemical and Biological Engineering	3	CBE160, may be registered concurrently	F, S
CBE 101A ¹	Introducton to Chemical and Biological Engineering	2	CBE160, may be registered concurrently	F, S
CBE 101B ¹	Introducton to Chemical and Biological Engineering	1	CBE101A, may be registered concurrently	F, S
CHEM 112	General Chemistry Lab I	1	CHEM111, may be registered concurrently or CHEM117, may be registered concurrently	F, S, SS
CHEM 245	Fundamentals of Organic Chemistry	4	CHEM107 or CHEM113	F, S, SS
CHEM 246	Fundamentals of Organic Chemistry Lab	1	CHEM108 or CHEM112 or CHEM114; CHEM245, may be registered concurrently	F, S, SS
CIVE 102 ¹	Introduction to Civil and Environmental Engineering	3		F
CIVE 260	Engineering Mechanics – Statics	3	MATH160; PH141	F, S, SS
CIVE 371	Study Abroad-Peru: Grand Challenges in Engineering	3		S
CS 152 ²	Introduction to Programming - Python	2	MATH124 or MATH125 or MATH126 with a B or higher OR MATH157 or MATH159 or MATH160 with a C or higher OR CS163	F, S
CS 165	CS2 -- Data Structures	4	CS162 with a C or higher or CS163 with a C or higher or CS164 with a C or higher	F, S
CS 220	Discrete Structures and Their Applications	4	CS150B or CS152 or CS162 with a C or higher OR CS163 or CS164 with a C or higher; MATH159 or MATH160	F, S
CS 253	Software Development with C++	4	CS165 with a C or higher	F, S
CS/IDEA 310H	Design Thinking Toolbox: Mixed Reality Design	3	CS253 or IDEA210	F, Even
DSCI 320	Optimization Methods in Data Science	3	CS 163 or CS 164 or CS 165 or CS 220 or DSCI 235; MATH 261; DSCI 369 or MATH 369	F
DSCI 369 ³	Linear Algebra for Data Science	4	(MATH124; MATH126) or MATH159 or MATH160 or MATH161	S
ECE 101	Foundations in ECE	1		F, S
ECE 232	Introduction to Project Practices	1	<i>For students enrolled in ECE majors prior to Fall 2021 only</i>	F, S
ECE 395 ⁴	Independent Study	1-3		F, S, SS
ENGR 300	3D Printing Lab for Engineers	1	BIOM101 or CBE101 or CIVE102 or ECE102 or ENGR101 or MECH103	F, S, SS
ENGR 380A4	Engineering Data Analytics	3	ECE102 or ECE103	S
HES 307	Biomechanical Principles of Human Movement	3	HES207 or BMS301; PH121 or PH141	F, S, SS
LIFE 103	Biology of Organisms – Animals and Plants	4		F, S, SS
MATH 151	Mathematical Algorithms in Matlab I	1	MATH160	F, S
MATH 229	Matrices & Linear Equations	2	MATH160	F, S
MATH 235	Introduction to Mathematical Reasoning	2	MATH161	S
MATH 317	Advanced Calculus of One Variable	3	MATH161; MATH230 or MATH235	F, S, SS
MATH 332	Partial Differential Equations	3	MATH340 or MATH345	S
MATH 360	Mathematics of Information Security	3	MATH161; MATH229 or DSCI369 or MATH369	F
MATH 366	Introduction to Abstract Algebra	3	MATH161	F, S, SS
MATH 369 ³	Linear Algebra I	3	MATH161	F, S, SS

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MECH 103 ¹	Introduction to Mechanical Engineering	3		F, S
MECH 104	Study Abroad-Germany: Intro to Mech Engineering	3		F
MECH 200 ¹	Introduction to Manufacturing Processes	3	MECH105	F, S
MECH 201 ¹	Engineering Design I	2	MECH105	F, S
MECH 237 ⁵	Introduction to Thermal Science	3	MATH160; PH141	F, S
MECH 337 ^{1,5}	Thermodynamics	4	MATH261; PH141	F, S
MIP 300	General Microbiology	3	BZ110 or BZ120 or LIFE102; CHEM245, may be registered concurrently or CHEM341, may be registered concurrently or CHEM345, may be registered concurrently	F, S, SS
PH 314	Introduction to Modern Physics	4	PH142; MATH261, may be registered concurrently	F, S
PH 341	Mechanics	4	MATH340 or MATH345; PH141	F
PH 353	Optics & Waves	4	MATH261; PH142	F
PSY 253	Human Factors & Engineering Psychology	3		SS
STAT 158	Introduction to R Programming	1		S, SS
¹ These courses may not be open for enrollment for students not declared in that major. Engineering Open Option and Engineering Undeclared-Seeking students may apply ENGR101 to the SME requirement.				
² CS152 counts only when CS163 is taken for the major requirement. Credit not allowed for both CS152 and CS150B - CS150B does not count for SME credit as it applies to AUCC or major requirements only.				
³ DSCI369 and MATH369 cover similar material; students may elect to take one of these two courses towards degree requirements. Credit will not be allowed for both.				
⁴ A maximum of 6 credits of Independent Study may apply towards total Electrical Engineering degree requirements. This includes credits awarded for ECE395 and ECE495 combined.				
⁵ MECH237 and MECH337 cover similar material; students may elect to take one of these two courses towards degree requirements. Credit will not be allowed for both.				