Electrical Engineering: Electrical Engineering Concentration
Technical Electives
Degree Total: 18 credits

Course Number	Course Title	Credits	Noted Prerequisites	Terms
ATS 550	Atmospheric Radiation and Remote Sensing	3	MATH261; PH142	F
CS 314	Software Engineering	3	CS214 with a C or higher or CS253 with a C or higher	F, S
CS 320	Algorithms--Theory and Practice	3	CS165 with a C or higher; CS220 with a C or higher; MATH160 with a C or higher; MATH229 with a C or higher or DSCI369 with a C or higher or MATH369 with a C or higher	F, S
CS 345	Machine Learning Foundations and Practice	3	CS220 with a C or higher; CS150B with a C or higher or CS152 with a C or higher or CS165 with a C or higher; MATH159 with a C or higher or MATH160 with a C or higher; ECE303/STAT303 with a C or higher	F, S
CS 356	Systems Security	3	CS214 with a C or higher or CS253 with a C or higher or CS370 with a C or higher	F, S
CS 370	Operating Systems	3	CS165 with a C or higher; ECE251 with a C or higher	F, S
CS 4XX	Any CS course at the 400 level **except CS457 and CS470**	4	Varies - check course for details	F, S, SS
CS 5XX	Any CS course at the 500 level	4	Varies - check course for details	F, S
DSCI 475	Topological Data Analysis	2	MATH369 or DSCI369	S
ECE 4XX	Any ECE course at the 400 level	3-4	Varies - check course for details	F, S
ECE 495[1,2]	Independent Study	1-6		F, S, SS
ECE 5XX	Any ECE course at the 500 level	3-4	Varies - check course for details	F,S
ENGR 480A1	Engineering with Drones	3	PH141; MATH340	S, Even
ENGR 570	Coupled Electromechanical Systems	3	ECE202 or ECE204	F, Even
MATH 417	Advanced Calculus I	3	DSCI369 or MATH369; MATH317	F
MATH 418	Advanced Calculus II	3	MATH417	S
MATH 419	Introduction to Complex Variables	3	MATH261	F
MATH 450	Intro to Numerical Analysis I	3	CS150B or CS152 or CS163 or CS164 or CS165 or CS253 or MATH151; MATH 261	F
MATH 451	Intro to Numerical Analysis II	3	CS150B or CS152 or CS163 or CS164 or CS165 or CS253 or MATH151; MATH340 or MATH34	S
MATH 460	Information and Coding Theory	3	MATH360 or MATH366; DSCI369 or MATH369	S
MATH 463	Post-Quantum Cryptography	3	MATH360 or MATH366 or MATH466; DSCI369 or MATH369 or MATH469	S, Odd
MATH 466	Abstract Algebra I	3	MATH235 or MATH360 or MATH366	F
MATH 469	Linear Algebra II	3	MATH161; DSCI369 or MATH369	S
MATH 474	Introduction to Differential Geometry	3	MATH261; DSCI369 or MATH369	F, Odd
MECH 518[3]	Orbital Mechanics	3	MATH340; PH142	F
MECH 519[3]	Aerospace Vehicles Trajectory and Performance	3	MATH340; PH142	S
MECH 564[3]	Fundamentals of Robot Mechanics & Controls	3	MECH 417 (will substitute ECE411 and ECE455 - must take both)	S
PH 315	Modern Physics Lab	2	PH314, may be registered concurrently	S
PH 425	Advanced Physics Laboratory	2	CS165 with a C or higher; CS220 with a C or higher; MATH160 with a C or higher; MATH229	S
PH 451	Introductory Quantum Mechanics I	3	MATH340 or MATH345; PH314	F
PH 452	Intro to Quantum Mechanics II	3	PH451	S

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PH 462	Statistical Physics	3	MATH340; PH 314; PH361	F
STAT 421	Introduction to Stochastic Processes	3	MATH229 or MATH369; STAT420 (will substitute ECE/STAT303 for STAT420)	S
SYSE 580A6	AI--Augmentaed Systems Engineering	3	SYSE501, may be registered concurrently	S, Even

[1] A maximum of 6 credits of Independent Study may apply towards degree requirements. This includes credits awarded for ECE395 and ECE495 combined.

[2] Biomedical Engineering - Electrical Engineering (EE) dual degree students may apply a maximum of 3 credits of independent study (ECE395 and ECE495) toward their EE degree requirements.

[3] Override required for registration - Must have a minimum 3.0 gpa or higher or consent of instructor.