

**Computer Engineering
Technical Electives
Degree Total: 5-19 credits**

Course Number	Course Title	Credits	Prerequisites	Terms
CS/IDEA 310H	Design Thinking Toolbox: Mixed Reality Design	3	CS214 with a C or higher or CS253 with a C or higher or IDEA210	F, Even
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 description for details	F,S,SU
CS 482A	Study Abroad-Japan: Engaging in Virtual Worlds	4	CS214 with a C or higher or CS253 with a C or higher; DSCI369 with a C or higher or MATH229 with a C or higher or MATH369 with a C or higher (credit not allowed for CS462 and CS482A)	SU
CS 5XX ¹	Any CS course at the 500 level	4	Varies - check course description for details	F,S
CT 307	High Performance Programming in Rust	2	CS165	S
DSCI 475	Topological Data Analysis	2	MATH369 or DSCI369	S
ECE 340	Electromagnetics for Computer Engineering	3	ECE202 with a C or higher; MATH161 with a C or higher	F
ECE 4XX	Any ECE course at the 400 level	3-4	Varies - check course description for details	F,S
ECE 495 ²	Independent Study	1-3		F,S,SU
ECE 5XX	Any ECE course at the 500 level except ECE532	3-4	Varies - check course description for details	F,S
ENGR 480A1	Engineering with Drones	3	PH141; MATH340	S, Even
ENGR 478	Applied Engineering Data Analytics	3	ECE102	S
MATH 360	Mathematics of Information Security	3	MATH161; CS220	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 MATH345	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
MECH 564 ³	Fundamentals of Robot Mechanics & Controls	3	MECH 417 (will substitute ECE411 and ECE455 - must take both)	S
MECH 580B6 ³	Aerospace Guidance, Navigation, and Control	3	MATH340; PH142	S
STAT 421	Introduction to Stochastic Processes	3	MATH229 or MATH369; STAT420 (will substitute ECE303/STAT303 for STAT420)	S
SYSE 580A6	AI--Augmented Systems Engineering	3	SYSE 501, may be taken concurrently	S, even

¹ Contact the CS instructor regarding registration and overrides for CS 500 level courses.

² A total of 6 credits of Independent Study may apply towards degree requirements. This includes credits awarded for ECE395 and ECE495 combined.

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

Courses used to fulfill major and concentration requirements will not be counted as Technical Elective credits.