Computer Engineering: Embedded & IoT Systems Concentration
Technical Electives
Degree Total: 13-16 credits

Course Number	Course Title	Credits	Prerequisites	Terms
CS 314	Software Engineering	3	CS214 with a C or higher or CS253 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/STAT 303 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, excluding **CS457** and **CS470**	4	Varies - check course description for details	F, S, SS
CS 545	Machine Learning	4	CS440	F
CS 553	Algorithmic Language Compilers	4	CS453	F
CS 559	Quantitative Security	4	CS356 with a B or higher; ECE303 with a B or higher - will need override from CS for STAT course	F
CS 575	Parallel Processing	4	CS475	F
ECE 340	Electromagnetics for Computer Engineering	3	ECE202 with a C or higher; MATH161 with a C or higher	F
ECE 445	Digital Logic Synthesis	3	ECE102 with a C or higher	S, Even
ECE 455	Introduction to Robot Programming/Simulation	3	CS152 with a C or higher or CS162 with a C or higher or CS163 with a C or higher or CS164 with a C or higher	F
ECE 456	Computer Networks	4	CS152 with a C or higher or CS162 with a C or higher or CS163 with a C or higher or CS164 with a C or higher; ECE251 with a C or higher; ECE/STAT303 with a C or higher; ECE311 with a C or higher	S
ECE 495[1]	Independent Study	1-3		F, S, SS
ECE 519	Network Centric Systems	3	CS165 with a C or higher; ECE303 with a C or higher or ECE312 with a C or higher or ECE421 with a C or higher or ECE456 with a C or higher or MATH369 with a C or higher	S, Even
ECE/CS 528	Embedded Systems and Machine Learning	4	ECE251 with a C or higher	F
ECE 544	Silicon Photonics in Computing Systems	3	PH141; ECE/STAT 303 with a C or higher	F
ECE 545	FPGA Signal Processing/Software-Defined Radio	3	ECE312 with a C or higher; ECE451 with a C or higher	S, Odd
ECE 554	Computer Architecture	3	ECE452	S, Even
ECE 558	Manycore System Design Using Machine Learning	3	ECE452 with a C or higher	F
ECE/CS 561	Hardware/Software Design of Embedded Systems	4	ECE251 with a C or higher or ECE452	S,Odd
ECE 571	VLSI System Design I	4	ECE450; ECE451	S
MATH 360	Mathematics of Information Security	3	MATH161; MATH229 or DSCI369 or MATH369	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
STAT 421	Introduction to Stochastic Processes	3	MATH229 or MATH369; STAT420 (will substitute ECE303/STAT303 for STAT420)	S

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