Computer Engineering Technical Electives 2022–2023

Five (5) Technical Electives are required in the Computer Engineering Program. Those five electives must be selected from the following list of courses. Of the five courses, not more than two (2) may be Electrical Engineering courses (identified with an asterisk *).

FALL TERM 2022

Course		Prerequisites	Cr. Hrs.
ECE 3580 *	Foundations of Electromagnetics	PHYS 2152, MATH 3132, ECE 2240	4
ECE 3670 *	Electronics 3E	ECE 2160	4
ECE 3720 *	Electric Power and Machines	ECE 2262	4
ECE 4150 *	Control Systems §	ECE 3780, ECE 2160	4
ECE 4260 *	Communication Systems §	STAT 2220, ECE 3780	4
ECE 4390 *	Engineering Computation 4E	MATH 3132, ECE 2240	4
ECE 4450	Applied Computational Intelligence	MATH 3132	4
ECE 4530	Parallel Processing	(COMP 2140 and ECE 3790) or (ECE 2240 and ECE 3730)	4
ECE 4560	Modern Computing Systems	ECE 3610	4
ECE 4610 *	Biomedical Instrumentation and Signal Processing	ECE 2160, ECE 3780	4
ECE 4740	Digital System Implementation	ECE 4240	4
ECE 4860	(T05) Applied Probability and Stochastic Processes	STAT 2220	4
COMP 2160	Programming Practices	COMP 1020	3
COMP 3020	Human-Computer Interaction 1	COMP 2140	3
COMP 3190	Introduction to Artificial Intelligence	COMP 2140	3
COMP 3380	Database Concepts and Usage	COMP 2140	3
COMP 3490	Computer Graphics 1	COMP 2140, MATH 1210, MATH 1510	3
COMP 4710	Introduction to Data Mining	COMP 3380	3

WINTER TERM 2023

Course		Prerequisites	Cr. Hrs.
ECE 3540 *	Advanced Circuit Analysis and Design	ECE 2262, MATH 3132	4
ECE 3600 *	Physical Electronics	PHYS 2152, MATH 3132, ECE 3670	4
ECE 4100 *	Microelectronic Fabrication	ECE 3670	4
ECE 4150 *	Control Systems §	ECE 3780, ECE 2160	4
ECE 4160 *	Control Engineering	ECE 4150	4
ECE 4180	Introduction to Robotics	ECE 4150, ECE 4240	4
ECE 4250	Digital Communications	ECE 4260, ECE 3780	4
ECE 4260 *	Communication Systems §	STAT 2220, ECE 3780	4
ECE 4440	Computer Vision	ECE 3780	4
ECE 4540	Wireless Networks	ECE 3700, ECE 3780	4
ECE 4860	(T08) Sensors, Instrumentation, and the IoT	ECE 2160	4
ECE 4860	(T14) Optimization Techniques	MATH 3132 or Permission of the Instructor (LoVetri)	4
COMP 2150	Object Orientation	COMP 2140, COMP 2160	3
COMP 3010	Distributed Computing	ECE 3740 or COMP 2150	3
COMP 3350	Software Engineering 1	ECE 3740 or COMP 2150	3
COMP 4020	Human-Computer Interaction 2	COMP 3020	3
COMP 4190	Artificial Intelligence	COMP 3190	3
COMP 4350	Software Engineering 2	COMP 3350	3
COMP 4360	Machine Learning	COMP 3190	3
COMP 4380	Database Implementation	COMP 3380	3
COMP 4430	Operating Systems 2	COMP 2160, COMP 3430	3
COMP 4490	Computer Graphics 2	COMP 3490	3
COMP 4580	Computer Security	COMP 3430, COMP 3010	3

Elective Courses Not Offered in 2022-2023

Course		Prerequisites	Cr. Hrs.
ECE 3750	Systems Engineering Principles 2	ECE 3740	4
ECE 3770	Digital Systems Design 2	ECE 4240	4
ECE 4420	Digital Control	ECE 4830, ECE 4150	4
ECE 4520	Simulation and Modelling	STAT 2220, COMP 2140	4
ECE 4860	(T02) Biomedical Signal Processing	ECE 3780	4
COMP 3290	Introduction to Compiler Construction	COMP 2140, ECE 3610	3
COMP 4200	Expert Systems	COMP 3190	3

§ Computer Engineering students are required to take one of *ECE 4150 Control Systems* or *ECE 4260 Communication Systems* as a core program requirement. The other course may be taken as an elective.