

CpE Technical Requirements

Courses that satisfy CpE technical electives are shown below. Four courses (12 credits) must be taken, one of which must meet the Probability and Statistics requirement.

Subject Area	Course	Course Title	Semester Offered ¹	Pre-requisites ²
Architecture	ECE 4680/4681	Embedded Computing	Spring	ECE 2230 ² and ECE 3710 ²
	ECE 4290	Organization of Computers	Fall	ECE 2720 ²
	ECE 4730	Introduction to Parallel Systems	Fall or Spring	ECE 3220 ² or ECE 3290 ²
Biomedical Systems	BIOE 3700/3701 ³	Bioinstrumentation and Bioimaging	Fall & Spring	MATH 2080 and ECE 2020 or ECE 2070; Co-req BIOE 3701
	BIOE 4310/4311 ³	Medical Imaging	Spring	MATH 2080 and ECE 2020 or ECE 2070 Pre requisite or concurrent enrollment BIOE 3700; Co-req BIOE 4311
	BIOE 4350 ³	Computer Modeling of Multiphysics Problems	Spring	MATH 2080
	BIOE 4710 ³	Biophotonics	Check w/ Dept.	MATH 2080, PHYS 2210 and ECE 2070 or ECE 3200
Communication Systems & Networks	ECE 4270	Communications Systems	Fall, Spring & Summer	ECE 3170 ² and ECE 3300 ²
	ECE 4300	Digital Communications	Fall or Spring	ECE 3170 ² , ECE 3300 ² and consent of instructor
	ECE 4380	Computer Communications	Spring & Summer	Senior standing in CpE or EE
	ECE 4400	Performance Analysis of Local Computer Networks	Spring	ECE 2720 ² and ECE 3170 ²
	ECE 4490/4491	Computer Network Security	Fall	Senior standing in CpE or EE; Co-req ECE 4491
Electronics	ECE 3210 ³	Electronics II	Fall, Spring & Summer	ECE 3200 ²
	ECE 4590 ³	Integrated Circuit Design	Fall	ECE 3200 ² or ECE 3210 ² , pre or co-req MATH 3110 ³ or MATH 4340 ² Co-req ECE 4591
Intelligent Systems	ECE 4160 ³	Smart Grid	Spring	SR standing in EE or CPE
	ECE 4310	Introduction to Computer Vision	Fall	ECE 2230 ²
	ECE 4550	Robot Manipulators	Summer	MATH 2060 ² and MATH 3110 ²
	ECE 4600	Computer-Aided Analysis and Design	Spring	ECE 2620 ² , MATH 3110 ² and MATH 4340 ²
	ECE 4670	Introduction to Digital Signal Processing	Fall & Summer	ECE 3300 ²
	ECE 4680/4681	Embedded Computing	Spring	ECE 2230 ² and ECE 3710 ² ; Co-req ECE 4681
Signal Processing	ECE 4310	Introduction to Computer Vision	Fall	ECE 2230 ²
	ECE 4670	Introduction to Digital Signal Processing	Fall & Summer	ECE 3300 ²
	ECE 4270	Communications Systems	Fall, Spring & Summer	ECE 3170 ² and ECE 3300 ²
Software	ECE 4420	Knowledge Engineering	Fall	ECE 3170 ² or MATH 4000 ² or STAT 3090 ²
	ECE 4490/4491	Computer Network Security	Fall	Senior standing in CpE or EE; Co-req ECE 4491
	ECE 4600	Computer-Aided Analysis and Design	Spring	ECE 2620 ² , MATH 3110 ² and MATH 4340 ²
	ECE 4730	Introduction to Parallel Systems	Fall or Spring	ECE 3220 ² or ECE 3290 ²
Other Course Options	ECE 4050 ⁴	Design Projects	Fall & Spring	ECE 3300 ² or ECE 4090 ² and consent of project supervisor
	ECE 4910 ⁴ H	Undergraduate Honors Research	Fall & Spring	Consent of instructor
	ECE 4920 ⁴	Special Problems	Fall & Spring	Consent of instructor
	ECE 4930 ⁴	Selected Topics	Fall & Spring	Consent of instructor
	ECE 4990 ⁴	Creative Inquiry	Fall & Spring	Consent of faculty member/mentor
	ECE 4990 ⁴ H	Honors Creative Inquiry	Fall & Spring	Consent of faculty member/mentor

¹ Semesters offered may be subject to change.

² A student is allowed to enroll in ECE courses (excluding ECE 2070, 2080, 3080) only when all prerequisites have been passed with a grade of C or better.

³ No more than 2 courses (6 credits) collectively from the Biomedical Systems and Electronics areas can be used to satisfy the Technical Elective Requirements.

⁴ A maximum of 3 credits from all courses listed in "Other Course Options" may be used to satisfy a Technical Elective Requirement.