

## Computer Engineering Technical Electives

### Group 1\*

Course #	Course Name	Cr	Pre- and Co-requisites
ECE 42800	Modern Communication Systems	3	P: ECE 30100, ECE 30200
ECE 54700	Intro to Computer Communication Networks	3	P: ECE 30200
ECE 56700	FPGA Designs for Signal Processing	3	P: ECE 35800, ECE 30100
CS 32100	Computer Graphics	3	CS 26000 or ECE 36800
CS 36000	Software Engineering	4	CS Department approval
CS 36400	Intro to Database Systems	3	P: CS 26000 or ECE 36800
CS 38400	Numerical Analysis	3	CS Department approval

\* ECE 49500 or other ECE 5XX00 courses in Computer Engineering area can be included in group 1 technical elective with the approval of Computer Engineering Curriculum Committee. Once a course is approved, a student can take it as a regular technical elective with the approval of the advisor.

### Group 2\*

Course #	Course Name	Cr	Pre- and Co-requisites
ECE 31100	Electric and Magnetic Fields	3	P: MA 36300, PHYS 25100
ECE 31300	Energy Conversion Lab	1	C: ECE 32400
ECE 32400	Introduction to Energy Systems	3	P: PHYS 25100, ECE 25500 C: ECE 20800
ECE 33300	Automatic Control Systems	3	P: ECE 30100, ME 25300
ECE 43600	Digital Signal Processing	3	P: ECE 30100
ECE 48300	Digital Control Systems – Analysis and Design	3	P: ECE 30100
ECE 49600	Computer Engineering Projects**	3(max)	Department approval
ECE 49700	Research in Computer Engineering I**	3	P: honors classification
ECE 49800	Research in Computer Engineering II**	3	P: ECE 49700 and honors classification
ECE 53800	Digital Signal Processing I	3	P: ECE 43600, ECE 30200
SE 51000	System Engineering***	3	senior or graduate standing
SE 52000	Engineering Economics	3	senior or graduate standing
SE 53000	Engineering Management***	3	senior or graduate standing
SE 55000	Advanced Manufacturing Systems and Processes	3	senior or graduate standing
MA 41700	Mathematical Programming	3	P: MA 26100 or MA 26300 and one of MA 26200, MA 35100, or MA 5110 with grade of C- or better
MA 41800	Computations Laboratory for MA 41700	1	P: CS 16000 or CS 11400 C: MA 41700
ME 25300	An Introduction to Mechanics	2	P: MA 26100, PHYS 15200
PHYS 32200	Optics	3	P: PHYS 25100
PHYS 34200	Modern Physics	3	P: PHYS 25100
PHYS 34500	Optics Laboratory I	1	C: PHYS 32200
PHYS 55000	Introduction to Quantum Mechanics	3	P: PHYS 34200

\* Other 5xx-level courses offered by ECE, math, computer science, or physics departments may be taken by the student in Group 2 technical electives with the approval of the advisor.

\*\* ECE 49600/49700/49800 requires approval of the CMPE curriculum committee.

\*\*\* Due to topic overlapping between SE 51000 and SE 53000, students can take either SE 51000 or SE 53000, but not both as their technical electives.

**Note:** A course cannot be counted towards both an undergraduate degree and a graduate degree, with the exception of the students enrolled in the 5 Year BS/MSE Combined Degree Program (For more information, visit the ECE Department website).

Computer Engineering majors can easily earn a minor in Computer Science, Math or Physics. For more information, visit the ECE Department website, or consult the department websites for the minor you are interested in.