

## Department of Electrical Engineering and Computer Science Computer Engineering Catalog 2017

<b>Fall</b> 15 hours	<b>Math 141 or 147 (4) FA, SP, SU</b> Prereq- Math 130 or Math ACT 28 or Math SAT 630	<b>EF 151 or 157 (4) FA, SP</b> Coreq- Math 141 or 147 and EF 105 or CS 102	<b>CS 102 (4) FA, SP, SU</b> Coreq- Math 141 or 147	<b>English 101 or 118 (3) FA, SP, SU</b>		
<b>Spring</b> 15 hours	<b>Math 142 or 148 (4) FA, SP, SU</b> Prereq- Math 141 or 147	<b>EF 152 or 158 (4) FA, SP</b> Prereq- EF 151 or 157	<b>CS 130 (4) FA, SP (formerly CS 160)</b> Prereq- CS 102	<b>English 102 (3) FA, SP, SU</b> Prereq- English 101 or 118		
<b>Fall</b> 16 hours	<b>Math 231 or 237 (3) FA, SP, SU</b> Prereq- Math 142 or 148	<b>ECE 201 (3) FA, SP, SU</b> Prereq- EF 152/158 and Math 142/148 grades C or better; Coreq- Math 231; submit access form	<b>CS 140 (4) FA, SP</b> Prereq- CS 130 (formerly CS 160)	<b>Physics 231 (3) FA, SP, SU</b> Coreq- Math 142 or 148	<b>ECE 255 (3) FA, SP</b> Prereq- CS 130 (formerly CS 160)	
<b>Spring</b> 18 hours	<b>Math 241 or 247 (4) FA, SP, SU</b> Prereq- Math 142 or 148	<b>ECE 202 (3) FA, SP, SU</b> Prereq- ECE 201	<b>Math 251 or 257 (3) FA, SP, SU</b> Prereq- Math 142 or 148	<b>Physics 232 (4) FA, SP, SU</b> Prereq- Physics 231 Coreq- Math 241 or 247	<b>Chem 120 or 128 (4) FA, SP, SU</b> Math 130	
<b>Fall</b> 17 hours	<b>ECE 315 (3) FA, SU</b> Prereq- ECE 202	<b>ECE 335 (3) FA, SP</b> Prereq- ECE 202	<b>CS 302 or 307 (4) FA, SP</b> Prereq- CS 140	<b>ECE 313 or 317 (3) FA, SP</b> Prereq- Math 142 or 148	<b>ECE 395 (1) FA, SP</b> Prereq- ECE 202	<b>Gen. Ed. (3) FA, SP, SU</b> Cultures and Civilizations
<b>Spring</b> 15 hours	<b>ECE 351 or 357 (3) FA, SP</b> Prereq- ECE 255	<b>CS 311 or 317 (3) FA, SP</b> Prereq- CS 140 and Math 142 or 148	<b>CS 361 (3)</b> Prereq- CS 130 and 302 or 307	<b>Upper Elective *(3) FA, SP, SU</b>	<b>Gen. Ed. (3) FA, SP, SU</b> Arts and Humanities	
<b>Fall</b> 17 hours	<b>ECE 401 (2) FA</b> Prereq- ECE 315 or 351	<b>ECE 451 or 457 (3) FA, SP</b> Prereq- ECE 255	<b>Upper Elective *(3) FA, SP, SU</b>	<b>Upper Elective *(3) FA, SP, SU</b>	<b>Gen. Ed. (3) FA, SP, SU</b> Arts and Humanities	<b>Gen. Ed. (3) FA, SP, SU</b> Social Science
<b>Spring</b> 15 hours	<b>ECE 402 (OC&amp;WC)(3)SP</b> Prereq- ECE 401	<b>Upper Elective*(3) FA, SP, SU</b>	<b>Upper Elective *(3) FA, SP, SU</b>	<b>Gen. Ed. (3) FA, SP, SU</b> Cultures and Civilizations	<b>Gen. Ed. (3) FA, SP, SU</b> Social Science	

\*Among the five Computer Engineering Upper Division Electives, you must choose courses that cover 3 tracks with one of the tracks being Networking & Embedded Systems.

The course distribution among the 3 tracks should follow the 2-2-1 pattern, among which at most 2 courses can be at the 3xx-level.

The following series lists the acceptable set of electives that may be taken to satisfy the upper division electives for the Computer Engineering major. The electives have been grouped into 8 suggested tracks.

The tracks group related electives that a student may wish to take in order to achieve a level of expertise in the indicated area. The 5xx-level courses are listed as suggestions to students admitted in the five-year BS/MS program.

**Networking & Embedded Systems:** ECE 453, ECE 455, ECE 461, ECE 462, ECE 463, CS 530, ECE 553, ECE 555, ECE 556, ECE 557; **Signals and Systems:** ECE 316, 462, 463, 471 or 477, 472 or 478, 505, 506, 571, 572;

**Machine Learning & Artificial Intelligence:** ECE 471/477, CS 420/427, CS 425, ECE 517, CS 526, CS 527, CS 528, CS 529, ECE 571; **Software Systems:** CS 340, CS 360, CS 370, CS 456, CS 465, CS 461, CS 462, CS 465, CS 525, CS 541, CS 560,

CS 565, CS 581; **Control and Communications:** ECE 316, ECE 415, ECE 416/417, ECE 341 or 347, ECE 342, ECE 441, ECE 442, ECE 443 ECE 463; **Electronics and Power:** ECE 316, ECE 336, ECE 431, ECE 432, ECE 433, ECE 325, ECE 421 or 427, ECE 481 or 487,

**Cybersecurity:** CS 425/528, CS 434/534, CS 445/545, CS 466/566, CS 483/583, ECE 459/559, ECE 461, ECE 462, ECE 469/569, ECE 471/571; **Integrated Circuits:** ECE 336, 431, 432, 433, 455, 459, 531, 532, 533, 551, 555, 559.

### Progression

The department requires at least a C in every computer engineering, computer science, electrical engineering, and mathematics course used for the undergraduate degrees. ECE 201 requires a C or better in EF 152/158 and Math 142/148.

Progression of departmental undergraduate students to the upper-division programs of the department is competitive and is based on the space available in the department. Factors considered in the decision include

overall grade point average, grades earned in courses required in the lower division curricula of the department and College of Engineering, and seriousness of purpose and interest in departmental programs as exemplified by regular and orderly progress through the prescribed curriculum without abuse of withdrawal and course repeat privileges.

Students who take ECE 300 (ECE 201-202) will be evaluated during the semester they are registered for it. Transfer students for whom ECE 300 (ECE 201-202) transfer credit is given may take 9 semester hours in departmental courses before progression evaluation. All students, whether or not they transfer in, who are not accepted into the upper-division program of the department will be put in either a temporary probationary status or a non-progressed status and will not be permitted to register for any upper division courses within the department.

Students also have opportunities for an Honors Concentration and/or a five year BS/MS program. See the Undergraduate Catalog for details and requirements.

### UTRACK Milestones:

Term 1	Term 2	Term 3	Term 4	Term 5	Term 6 through 8
Math 130 or higher or one SS or one AH or one CC	Math 130 or higher	EF 151/157 or Physics 135/137	EF 152/158 or Physics 136/138	ME 202 or CS 102 or MSE 201 or CBE 201	No Milestones