

**Areas of Specialization (Required and Elective Courses)**

The following list includes both required and elective courses. Only 300 and 400 level courses that are not required in the degree plan can be used to satisfy the technical elective requirements. Approved computer science courses may also be used as electives. The selection must be approved by the student's advisor, and the total package of electives must contain at least four units of design.

**COMPUTER ENGINEERING**

		<b>Credit Hours</b>	<b>Design Credit</b>	<b>Prerequisites (Co-requisites)</b>
<b>Computer Software</b>				
*CPSC 121	Computer Science I ( <i>Fall, Spring</i> )	3	0	None
*CPSC 122	Computer Science II ( <i>Fall, Spring</i> )	3	0	CPSC 121
*CPSC 223	Abstract Data Structures ( <i>Fall, Spring</i> )	3	0	CPSC 122, (MATH 231)
#CPEN 423	Object-Oriented Mod. and Design ( <i>Fall, on demand</i> )	3	1.5	CPSC 223
*#CPSC 421	Database Management Systems ( <i>On demand</i> )	3	3	CPSC 223, MATH 231
*#CPSC 428	Compiler Theory and Design ( <i>On demand</i> )	3	3	CPEN 231, CPSC 351
*#CPSC 446	Operating Systems ( <i>On demand</i> )	3	3	CPEN 231, CPSC 223
<b>Computer Hardware</b>				
CPEN 230/230L	Introduction to Digital Logic ( <i>Fall, Spring</i> )	4	2	None
CPEN 231/231L	$\mu$ -processor Arch & Assembly Prog ( <i>Fall, Spring</i> )	4	2	CPEN 230, CPSC 121
#CPEN 430/430L	Digital System Design ( <i>Fall</i> )	4	2	CPEN 230, CPSC 121
#CPEN 431	Computer Architecture ( <i>Spring</i> )	3	1.5	CPEN 231, CPEN 430
<b>Computer Systems</b>				
CPEN 321/321L	Introduction to System Software ( <i>Fall</i> )	3	2	CPEN 231
CPEN 342/342L	Embedded Computer Systems ( <i>Spring</i> )	4	1.5	CPEN 321, (EENG 304)
#CPEN 428	Real-Time Computer Sys. Eng. ( <i>Spring, on demand</i> )	3	2	CPEN 321
#CPEN 447	Data Communications ( <i>Fall, on demand</i> )	3	1	CPEN 231, CPSC 223
<b>Electrical Engineering</b>				
EENG 201/201L	Circuit Analysis I ( <i>Spring</i> )	4	0	MATH 258, PHYS 103
#EENG 301	Electromagnetic Fields and Materials ( <i>Fall</i> )	4	0	EENG 201, PHYS 204, MATH 260, (EENG 302)
EENG 302	Circuit Analysis II ( <i>Fall</i> )	3	0	EENG201
EENG 303/303L	Electronics Design I ( <i>Fall</i> )	4	2	EENG 201, (EENG 302)
EENG 304/304L	Electronics Design II ( <i>Spring</i> )	4	2	CPEN 230, EENG 303
EENG 311	Signals and Systems ( <i>Spring</i> )	4	0	EENG 302, MATH 260
EENG 322	Probabilistic Methods for Elect Engineers ( <i>Spring</i> )	3	0	(EENG 311)
#EENG 340/340L	Introduction to Electric Power Engineering ( <i>Spring</i> )	4	0.5	EENG 302
#EENG 401	Advanced Electronics ( <i>Fall, on demand</i> )	3	2	EENG 304
#EENG 402	Electromagnetic Waves and Materials ( <i>On demand</i> )	3	1	EENG 301
#EENG 403	Passive and Active Filter Design ( <i>On demand</i> )	3	2	EENG 311
#EENG 406	Intro to Integrated Circuit Eng. ( <i>Spring, on demand</i> )	3	1	CPEN 231, EENG 304
EENG 411	Introduction to Control Systems ( <i>Fall</i> )	3	1.5	EENG 304, EENG 311
#EENG 412	Digital Control Systems ( <i>Spring, on demand</i> )	3	1.5	EENG 411
#EENG 413/413L	Automation ( <i>On demand</i> )	3	2	CPSC 121, EENG 311 or MENG 301/301L
#EENG 421	Introduction to Communication Systems ( <i>Fall</i> )	3	0.5	EENG 311, EENG 322
#EENG 422	Digital Communication Sys. ( <i>Spring, on demand</i> )	3	1	EENG 421
#EENG 424	Digital Signal Processing ( <i>Fall, on demand</i> )	3	1.5	EENG 311
#EENG 425	Communication and Controls Laboratory ( <i>Fall</i> )	1	0.5	(EENG 411, EENG 421)
#EENG 441	Analysis of Power Systems ( <i>Fall, on demand</i> )	3	1	EENG 340
#EENG 442	Electric Power Distribution Eng. ( <i>On demand</i> )	3	1.5	EENG 340
#EENG 443	Analysis of Electrical Machines ( <i>On demand</i> )	3	1	EENG 340
#EENG 444	Computational Methods for Power Systems ( <i>Spring, on demand</i> )	3	1.5	EENG 441
#EENG 427	Wireless Systems ( <i>On demand</i> )	3	1.5	EENG 311, EENG322

Notes: \* Offered by the Department of Computer Science; # Technical elective