ECE Curriculum Pre-reqs and Co-reqs

ECE courses	Name	Pre-requisites	Co-requisites	Pre-requisites or Concurrent enrollment
1010	Robots in Business & Society			
1990	Creative Inquiry	Consent of Instructor		
2010	Logic & Computing Devices	Sophmore Standing		
2020	Electric Circuits 1	MATH 1080		PHYS 2210
2040	Circuit Analysis Problems 1			ECE 2020
2070	Basic Electrical Engineering	MATH 2060, PHYS 2210		
2080	Basic Electrical Engineering Lab			ECE 2070
2090	Logic & Computing Devices Lab			ECE 2010
2110	Electrical Engineering Lab 1			ECE 2020
2120	Electrical Engineering Lab 2	ECE 2020, 2110		ECE 2620
2220	Systems Programming Concepts	CPSC 1110		
2230	Computer Systems Engineering	ECE 2220		
2620	Electric Circuits 2	ECE 2020, MATH 2060, PHYS 2210		
2630	Circuit Analysis Problems 2			ECE 2620, MATH 2080
2720	Computer Organization	ECE 2010, CPSC 1110		
2730	Computer Organization Lab			ECE 2720
2990	Creative Inquiry	Consent of Instructor		
3000	Junior Honors Seminar	Enrollment in Departmental Honors Program		
3080	Fundamentals of Electrical Engineering	MATH 2060, PHYS 2210		
3110	Electrical Engineering Lab 3	ECE 2120, 2620, MATH 2080, PHYS 2210		ECE 3200
3120	Electrical Engineering Lab 4	ECE 3110, 3200		ECE 3210
3170	Random Signal Analysis	ECE 2620, MATH 2080		ECE 3300
3200	Electronics 1	ECE 2620, MATH 2080, PHYS 2210		
3210	Electronics 2	ECE 3200		
3220	Introduction to Operating Systems	ECE 2230, 2720		
3270	Digital Computer Design	ECE 3710		
3290	Computer Systems Structures	ECE 2230, 2720		
3300	Signals, Systems, and Transforms	ECE 2620, MATH 2080		
3520	Programming Systems	ECE 2230		CPSC 2070 or MATH 4190
3600	Electric Power Engineering	ECE 2620, PHYS 2210		
3710	Microcontroller Interfacing	ECE 2720		ECE 2620
3720	Microcontroller Interfacing Lab			ECE 3710
3800	Electromagnetics	ECE 2020, MATH 2060, PHYS 2210		ECE 2620
3810	Fields, Waves, and Circuits	ECE 2620, 3800, MATH 2080		
3990	Creative Inquiry	Consent of Instructor		
4040 / 6040	Semiconductor Devices	ECE 3200		
4050	Design Projects in ECE	ECE 3300 *or* 4090, consent of project supervisor		
4060 / 6060	Introduction to Microelectronics Processing	ECE 3200		
4080 / 6080	Silicon Photonic Integrated Circuits	ECE 3200, ECE 3800		
4090	Introduction to Linear Control Systems	ECE 3300		
4120	Electrical Machines Lab			ECE 3600
4160	Smart Grid			SR Standing
4170 / 6170	Elements of Software Engineering	ECE 3220, 3520, MATH 4190		
4180 / 6180	Power System Analysis	ECE 3600, 3800		
4190 / 6190	Electric Machines and Drives	ECE 3210, 3600, 3800		
4100	Industrial Control and Automation in ECE	ECE 4090		
4200 / 6200	Renewable Energy Penetration on the Power Grid	ECE 2070 *or* ECE 3200		
4220 / 6220	Electronic System Design	ECE 3210, 3300, 3600, 3710, 3810	ECE 4221	
4221 / 6221	Electric System Design 1 Lab		ECE 4220	
4270	Communications Systems	ECE 3170, 3300		
4290 / 6290	Organization of Computers	ECE 2720		
4300 / 6300	Digital Communications	ECE 3170, 3300, consent of instructor (consent not required for honors students)		
4310	Introduction to Computer Vision	ECE 2230		SR Standing
4320 / 6320	Instrumentation	ECE 3210		
4330 / 6330	Optical Fiber Communication Systems	ECE 3300, 3800		
4340 / 6340	Optoelectronics and Photonics	ECE 3810		
4350 / 6350	Grounding and Shielding	ECE 3810		
4360 / 6360	Microwave Circuits	ECE 3810		
4370	Microelectromechanical Systems	CH 1020, PHYS 1220		SR Standing
4380 / 6380	Computer Communicatins	Senior standing in EE *or* CpE *or* CPSC		
4390 / 6390	Fiber Optics	ECE 3810		
4400 / 6400	Performance Analysis of Local Computer Networks	ECE 2720, 3170		
4420 / 6420	Knowledge Engineering	ECE 3170 *or* MATH 4000 *or* STAT 3090		
4460 / 6460	Antennas and Propagation	ECE 3300, 3810		

ECE Curriculum Pre-reqs and Co-reqs

ECE courses	Name	Pre-requisites	Co-requisites	Pre-requisites or Concurrent enrollment
4490 / 6490	Computer Network Security	Senior standing in EE or CpE	ECE 4491	
4491 / 6491	Computer Network Security Lab		ECE 4490	
4530	Software Practicum	ECE 3220, 3520	ECE 4531	
4531	Software Practicum Lab		ECE 4530	
4550 / 6550	Robot Manipulators	MATH 2080, PHYS 1220, SR Standing		
4570 / 6570	Fundamentals of Wind Power	ECE 2070 *or* ECE 3200		
4580 / 6580	Algorighms for VLSI Design	ECE 3200		
4590 / 6590	Integrated Circuit Design	ECE 3200 *or* ECE 3210	ECE 4591	
4591 / 6591	Integrated Circuit Design Lab		ECE 4590	
4600	Computer-Aided Analysis and Design	ECE 2620		
4610 / 6610	Fundamentals of Solar Energy	ECE 3200		
4670 / 6670	Introduction to Digital Signal Processing	ECE 3300		
4680 / 6680	Embedded Computing	ECE 2230, 3710	ECE 4681	
4681 / 6681	Embedded Computing Lab		ECE 4680	
4700	Vehicle Electronics	ECE 3200		
4710 / 6710	Electrification of Transportation	ECE 3200		
4730 / 6730	Introduction to Parallel Systems	ECE 3220 *or* ECE 3290		
4740 / 6740	Fault Tolerance & Reliability in High-Perf Comp.	ECE 3220 *or* ECE 3290, ECE 4730 recommended		
4910	Undergraduate Honors Research	Consent of Instructor		
4920 / 6920	Special Problems	Consent of Instructor		
4930 / 6930	Selected Topics	Consent of Instructor		
4950	Integrated System Design 1	EE: ECE 3200, 3300, 3710, 3800 CPE: ECE 2230, 3200, 3220, 3300, 3710	ECE 4951	ECE 4090
4951	Integrated Systgem Design 1 Lab		ECE 4950	
4960	Integrated System Design 2	EE: ECE 3210, 3600, 3810, 4090, 4950 CPE: ECE 3270, 3520, 4090, 4950		
4980 / 6980	Research in Electrification of Transportation	Consent of Instructor		
4990	Creative Inquiry	Consent of instructor		
MATH courses	**Name**	**Pre-requisites**	**Co-requisites**	**Pre-requisites or Concurrent enrollment**
MATH 1060	Calculus of One Variable 1	SAT Math >= 680 *or* ACT Math >= 29; *or* CMPT >= 80		
MATH 1080	Calculus of One Variable 2	MATH 1060 *or* MATH 1070		
MATH 2060	Calculus of Several Variables	MATH 1080 *or* MATH 1110		
MATH 2080	Intro to Ordinary Differential Equations	MATH 2060		
MATH 3110	Linear Algebra	MATH 1080 *or* MATH 1110		
MATH 3650	Numerical Methods for Engineers	ENGR 1090 *or* ENGR 1410 and MATH 2080		
MATH 4190	Discrete Mathematical Structures 1	MATH 3110		
MATH 4340	Advanced Engineering Mathematics	MATH 2080		
MATH 4400	Linear Programming	MATH 2060, MATH 3110		
MATH 4410	Introduction to Stochastic Models	MATH 4000*		
STAT 4410	Statistical Methods for Process Development & Control	MATH 2060		
Other Courses	**Name**	**Pre-requisites**	**Co-requisites**	**Pre-requisites or Concurrent enrollment**
CH 1010/1011	General Chemistry		CH 1011	MATH 1040 *or* MATH 1060 *or* MATH 1070
CH 1020/1021	General Chemistry	CH 1010	CH 1021	
CPSC 1110/1111	Introduction to Programming in C	SAT Math >= 620 *or* ACT Math >=26 *or* CMPT >=60 *or* ENGR 1020 *or* ENGR 1050	CPSC 1111	
PHYS 1220	Physics with Calculus 1			MATH 1060 *or* MATH 1070
PHYS 2210	Physics with Calculus 2			MATH 1080 or MATH 1110

***Note: MATH 4000 (Theory of Probability) is a prerequiste. Students will need override to use ECE 3170 in place of MATH 4000. See MATH Department to request override.**

updated 6/15/21; effective AY 20-21