

## Electrical Engineering: Smart Grid Specialization 2022-2023

Year	Course	Course	Course	Course	Course	Course
1-1	COMM 1050U Technical Communications	ENGR 1015U Introduction to Engineering	MATH 1010U Calculus I	MATH 1850U Linear Algebra for Engineers	PHY 1010U Physics I	
1-2	CHEM 1800U Chemistry for Engineers (Credit restrictions: CHEM 1010U/CHEM 1020U/CHEM 1110U)	ENGR 1025U Engineering Design (ENGR 1015U or NUCL 1530U)	ENGR 1200U Introduction to Programming for Engineers	MATH 1020U Calculus II (MATH 1010U)	PHY 1020U Physics II (PHY 1010U)	SSCI 1470U Impact of Science and Technology on Society
2-1	ELEE 2110U Discrete Mathematics for Engineers (MATH 1020U, MATH 1850U)	ELEE 2200U Electrical Engineering Fundamentals (MATH 1020U, MATH 1850U, PHY 1020U)	MATH 2860U Differential Equations for Engineers (MATH 1020U, Coreq: MATH 1850U)	MECE 2640U Thermodynamics and Heat Transfer (MATH 1020U, PHY 1010U)	SOFE 2710U Object Oriented Programming and Design (ENGR 1200U)	
2-2	ELEE 2210U Circuit analysis (ELEE 2200U, MATH 2860U)	ELEE 2250U Introductory Electronics (ELEE 2200U)	ELEE 2450U Digital Systems (ELEE 2110U)	ELEE 2530U Complex Analysis for Engineers (MATH 2860U)	ELEE 2520U Fundamentals of Electromagnetics (ELEE 2200U, MATH 2860U)	ENGR 2100U Computational Engineering Applications (ENGR 1200U, MATH 1850U, MATH 2860U)
3-1	ELEE 3110U Signals and Systems (ENGR 2100U, ELEE 2530U, ELEE 2210U)	ELEE 3230U Electronic Circuit Design (ELEE 2250U)	ELEE 3240U Applications for Electromagnetics (ELEE 2520U, ELEE 2530U)	ELEE 3250U Electric Machines (ENGR 2100U, Coreq: ELEE 3240U)	ELEE 3450U Microprocessors and Computer Architecture (ELEE 2450U)	Liberal Studies Elective
3-2	ELEE 3070U Probability and Random Signals (ELEE 3110U)	ELEE 3100U Introduction to Control Systems (ELEE 3110U)	ELEE 3130U Communication Systems (ELEE 3110U)	ELEE 3180U Design Principles & Project Management in Electrical Engineering (ELEE 2250U, ELEE 2450U, ELEE 2520U, SOFE 2710U)	ELEE 3260U Power Systems (ELEE 3250U)	ENGR 3360U Engineering Economics
4-1	ELEE 4115U Fundamentals of Smart Grid (ELEE 3260U)	ELEE 4150U Advanced Control Systems (ELEE 3100U)	ELEE 4420U Digital Signal Processing (ELEE 3110U)	ENGR 4940U Capstone Systems Design for Electrical, Computer and Software Engineering I (Successful completion of all non-elective courses in year three)	Liberal Studies Elective	
4-2	ELEE 4120U Introduction to Power Electronics (ELEE 3100U, ELEE 3230U, ELEE 3250U)	ELEE 4125U Smart Grid Networking and Security (ELEE 4115U)	ELEE 4140U Power System Protection Relaying (ELEE 3100U, ELEE 3230U, ELEE 3250U, ELEE 3260U)	ENGR 4760U Ethics, Law and Professionalism for Engineers	ENGR 4941U Capstone Systems Design for Electrical, Computer and Software Engineering II (ENGR 4940U)	