

Electrical & Electronic Engineering Elective List - Eff. Fall 2024

AREA 1: Analog/Digital Electronics	AREA 2: Control Systems	AREA 3: Communication Engineering	AREA 4: Power Engineering
EEE 109 - <i>*+Electronics II</i> (4) Prereqs: EEE 108, 108L, 117, 117L (See note below)	EEE 178 - <i>Intro. to Machine Vision</i> (3) Prereqs: EEE 180 or ME 172, or Instructor approval	EEE 122 - <i>Applied Digital Signal Processing</i> (3) Prereqs: EEE 117, EEE 180	EEE 130 - <i>Electromechanical Conversion</i> (3) Prereqs: EEE 117 and EEE 161
EEE 110 - <i>Advanced Analog IC</i> (3) Prereq: EEE 109 or Instructor Permission	EEE 187 - <i>Robotics</i> (4) Prereqs: EEE 180 or equivalent, or instructor permission	EEE 162 - <i>Applied Wave Propagation</i> (3) Prereqs: EEE 117, EEE 161	EEE 131 - <i>+Electromechanics Lab</i> (1) Prereqs: EEE 117, EEE 130, WPF or equivalent; EEE 130 may be taken concurrently
EEE 111 - <i>Adv. Analog IC Lab</i> (1) Prereqs: EEE 109; either EEE 110 or EEE 230 may be taken concurrently	EEE 188 - <i>+Digital Control System</i> (3) Prereqs: EEE 180	EEE 163 - <i>+Traveling Waves Lab</i> (1) Prereqs: EEE 117, EEE 162; EEE 162 may be taken concurrently	EEE 135 - <i>Renewable Electrical Energy Sources & Grid Integration</i> (3) Prereq: EEE 130 or EEE 141
EEE 120 - <i>Electronic Instrumentation</i> (4) Prereqs: EEE 108, EEE 117; 108 may be taken concurrently	EEE 189 - <i>+Controls Lab</i> (1) Prereqs: EEE 184; may be taken concurrently	EEE 165 - <i>Intro. To Optical Engineering</i> (3) Prereqs: EEE 161, EEE 180, EEE 185; 185 may be taken concurrently	EEE 136 - <i>Smart Electric Power Grid</i> (3) Prereq: EEE 141
EEE 166 - <i>Physical Electronics</i> (3) Prereqs: EEE 108 and CHEM 1E		EEE 167 - <i>+Electro-Optical Engineering Lab</i> (1) Prereqs: EEE 161, EEE 165, EEE 180; EEE 165 may be taken concurrently	EEE 137 - <i>Applications of Power Electronics in Power Systems</i> (3) Prereq: EEE 141
CpE 138 - <i>Computer Networking Fundamentals</i> (3) Prereqs: CSC 35, CSC 60, CSC 130		EEE 181 - <i>Intro. To Digital Signal Processing</i> (3) Prereqs: EEE 64, EEE 180	EEE 142 - <i>**Power System Analysis II</i> (3) Prereq: EEE 141, EEE 161, EEE 184 (may be taken concurrently), (See note below)
CpE 151 - <i>CMOS and Digital VLSI Design</i> (3) Prereqs: CpE/EEE 64, EEE 108, EEE 108L		EEE 182 - <i>Digital Signal Processing Lab</i> (1) Prereqs: EEE 180, EEE 181; EEE 181 may be taken concurrently	EEE 143 - <i>**+Power System Lab</i> (1) Prereqs: EEE 142 (may be taken concurrently), (See note below)
CpE 153 - <i>VLSI Design</i> (3) Prereq: CPE 151		EEE 183 - <i>Digital & Wireless Comm. System Design</i> (3) Prereqs: EEE 161, EEE 180, EEE 185; EEE 185 may be taken concurrently	EEE 144 - <i>Electric Power Distribution</i> (3) Prereq: EEE 141
CpE 166 - <i>Advanced Logic Design</i> (4) Prereqs: EEE 64, ENGR 17		EEE 186 - <i>+Communication Systems Lab</i> (1) Prereqs: EEE 117, EEE 185 may be taken concurrently	EEE 145 - <i>Power System Relay Protection & Lab</i> (4) Prereqs: EEE 141
CPE 186 - <i>Computer Hardware System Design</i> (3) Prereqs: CpE 185 or EEE 174			EEE 146 - <i>Power Electronics</i> (3) Prereqs: EEE 108 & EEE 108L
CpE 187 - <i>+Embedded Systems Design</i> (2) Prereqs: CpE 185 or EEE 174			EEE 147 - <i>Power System Operation and Control Lab</i> (1) Prereqs: EEE 142
			EEE 148 - <i>Power Electronics Lab</i> (1) Prereqs: EEE 146 (may be taken concurrently)

EEE Electives:

- Students planning to complete EEE 193A/EEE 193B series must complete 7 units of depth electives + 6 units of electives from any area.
- Please check with your advisor if you have any questions.

Notes:

+ WPJ Score of 70+ OR ENGL 109W/M required

*Students planning to complete EEE 193A/EEE 193B series may not use EEE 109 to meet depth/elective requirement

**Students planning to complete EEE 192A/EEE 192B series may not use EEE 142 and EEE 143 to meet depth/elective requirement.

Electrical & Electronic Engineering Required Courses - Eff. Fall 2024

Required Lower Division Courses	Required Upper Division Courses	Required Power Design Project Courses	Required Electronic/Product Design Project Courses
CHEM 1E - General Chemistry for Engineers (4) Prereqs: H.S. chemistry; Math 30 or eligibility to take MATH 30 passing score on a standardized Chemistry diagnostic exam given prior to each semester, or minimum grade of "C" in CHEM 4	EEE 108 - Electronics I (3) Prereqs: EEE 117 & EEE 117L; Coreq EEE 108L	NOTE: Choose 2 elective classes (6 units) <u>and</u> 1 elective lab (1 unit) from one of the elective areas on the back page.	NOTE: Choose 2 elective classes (6 units) <u>and</u> 1 elective lab (1 unit) from one of the elective areas on the back page.
EEE/CpE 64 - Intro. to Logic Design (4) Prereqs: CSC 15 or CSC 25 or ENGR 50	EEE 108L - Electronics I Lab (1) Prereqs: EEE 117, EEE 117L; Coreq EEE 108	NOTE: You also need to choose 2 elective classes (6 units) from any elective area.	NOTE: You also need to choose 2 elective classes (6 units) from any elective area.
ENGL 20 - College Composition II (3) Prereqs: Engl 5 or Engl 5M or Engl 11 or Engl 11M	EEE 117 - Network Analysis (3) Prereqs: Engr 17, Math 45, Phys 11C; Coreq EEE 117L	EEE 142 - Power System Analysis II (3) Prereq: EEE 141, EEE 161, & EEE 184 (184 can be concurrent)	EEE 109 - + Electronics II (4) Prereqs: EEE 108, EEE 108L, EEE 161, EEE 117, EEE 117L; and)GWAR Certification before Fall 09, or WPJ score of 70+, or at least a C- in ENGL 109M or ENGL 109W).
ENGR 1 (96A) - Intro. to Engineering (1) Prereqs: Engineering major status or instructor permission	EEE 117L - Network Analysis Lab (1) Coreqs: EEE 117	EEE 143 - + Power System Laboratory (1) Prereq: EEE 142 (can be concurrent), WPJ score of 70+	EEE 193A - +Product Design Project I (2) Prereqs: EEE 108, EEE 109, EEE 161, EEE 174, EEE 180 (EEE 109 may be taken concurrently), GE Area A and (WPJ score of 70+, or at least a C- in ENGL 109M or ENGL 109W).
ENGR 17 - Introductory Circuit Analysis (3) Prereqs: Math 45, Phys 11C; either can be taken concurrent, but not both	EEE 141 - Power System Analysis (3) Prereq: EEE 117	EEE 192A - +Electrical Power Design Project I (2) Prereqs: EEE 141, EEE 142, EEE 143; (EEE 142 and EEE 143 may be taken concurrently). WPJ score of 70+, or at least a C- in ENGL 109M or ENGL 109W.	EEE 193B - Product Design Project II (2) Prereqs: EEE 193A
ENGR 50 - Computational Methods & Apps. (3) Prereqs: Math 30, Phys 11A; Phys 11A may be taken concurrently	EEE 161 - Applied Eletromagnetics (4) Prereqs: Math 32, Math 45, Phys 11C, Engr 17	EEE 192B - + Electrical Power Design Project II (2) Prereqs: EEE 142, EEE 143, and EEE 192A	
MATH 30 - Calculus I (4) Prereqs: Score of 76 or higher on ALEKS PPL exam or MATH 29 or MATH 29B	EEE 174 - Introduction to Microprocessors (4) Prereqs: EEE 64; Junior status		
MATH 31 - Calculus II (4) Prereqs: MATH 30 or appropriate high school based AP credit.	EEE 180 - Signals and Systems (3) Prereqs: ENGR 17, MATH 45, EEE 117/117L; EEE 117/L may be taken concurrently.		
MATH 32 - Calculus III (4) Prereqs: Math 31	EEE 184 - Introduction to Feedback Systems (3) Prereqs: EEE 180		
MATH 45 - Differential Equations for Science/Eng. (3) Prereqs: Math 31	EEE 185 - Modern Communication Systems (3) Prereqs: EEE 180, Engr 120; Engr 120 may be taken concurrently		
PHYS 11A - Gen Physics: Mechanics (4) Prereqs: MATH 30, MATH 31; or equivalent certificated high school courses. MATH 31 may be taken concurrently.	ENGR 120 - Probability & Random Signals (3) Prereqs: EEE 180 (may be taken concurrently)		
PHYS 11C - Gen Physics: Electricity & Magnetism (4) Prereqs: Math 31, Phys 11A	ENGR 140 - Engineering Economics (2) Prereqs: ENGR 17 or ENGR 30		NOTE: +WPJ Score of 70+ OR ENGL 109W/M required