Electricity/Electronics Technology (E/ET)

The Electricity/Electronics offerings are designed to provide a knowledge-base and practical skills necessary to many careers. A fundamental knowledge of electricity and electronics are part of what drives all technology of the 21st century. In particular, anyone desiring careers in telecommunications, electronics product development (including computers and micro-processor driven equipment), Bio-Science Technologies (including anyone using medical equipment), construction, manufacturing, engineering and transportation must consider one or more of these classes. These courses are necessary for anyone involved with facility or plant maintenance, Homeowners and consumers will find many of the courses useful to aid them in selection of consumer products and effecting general household repairs.

E/ET 11
Commercial Electricity for HVAC
2 units, 1.5 hours lecture, 1.5 hours laboratory (GR)
Recommended preparation: E/ET 202 and ECT 214
Acceptable for credit: CSU
Introduction to advanced commercial electricity for heating and air conditioning: High voltage single-phase and three-phase, transformers, capacitors, HVAC system controls, motor controls, HVAC electrical schematic diagrams, instrumentation, national codes and safety. 0946.00

E/ET 202
Fundamentals of Electricity for ECT
2 units, 1.5 hours lecture, 1.5 hours laboratory (GR)
Corequisite: ECT 214
Introduction to basic concepts of electricity: Ohm's power, electrical circuits, electrical diagrams, magnetism and electromagnetism, instruments and tools used in the industry, safety procedures, and controls and motors. 0934.40

E/ET 203
Basic Electricity
3 units, 2 hours lecture, 3 hours laboratory (GR)
Recommended preparation: E/ET 102
Introduction to basic concepts of electricity: Ohm's law, power, electrical circuits, electrical diagrams, magnetism and electromagnetism, controls and motors, instruments and tools used in the industry, and safety procedures. 0934.40

E/ET 204
Technical Math for Electricians
3 units, 3 hours lecture (GR)
Recommended preparation: Math 201
Topics in mathematics with specific application to the electrical/electronics industry: Decimals and fractions, ratios and proportions, unit conversions, areas and volumes, application of algebraic equations in Ohm's and Kirchoff's Laws, solving for circuit resistance and reactance, relevant trigonometric functions, and use of graphs to represent and analyze data. 0934.40

E/ET 206
Cabling Technician
4 units, 2 hours lecture, 6 hours laboratory (GR or P/NP)
Various kinds of cables used in the telecommunication industry: Emphasis on installation application of connectors. 0934.30

E/ET 207A
National Electrical Code for Electricians 1
3 units, 3 hours lecture (GR or P/NP)
Recommended preparation: E/ET 218
Introduction to the first half of the current National Electrical Code: General wiring including "Wiring and Protection", "Wiring Methods and Materials," and "Equipment for General Use". 0934.40

E/ET 207B
National Electrical Code for Electricians 2
3 units, 3 hours lecture (GR or P/NP)
Recommended preparation: E/ET 218
Introduction to the second half of the National Electrical Code: "Special Occupancies", "Special Equipment", "Special Conditions", "Communications Systems", and "Tables". 0934.40

E/ET 208
Introduction to Photovoltaics
3 units, 2 hours lecture, 3 hours laboratory (GR)
Recommended preparation: E/ET 101 and 102
Introduction to basic principles of photovoltaics: Arrays, the electrical power they generate, and their inclusion in the electrical system; power sources and energy storage techniques, and system attachment to structures. Hands on practice with photovoltaic (PV) power generation and its present and future applications. 0934.40

Electricity/Electronics Technology

E/ET 214A
Electronics I
4 units, 3 hours lecture, 3 hours laboratory (GR)
Basic concepts of electronics: Semiconductor and zener diodes, junction field-effect and metallic-oxide semiconductor field-effect transistors, bipolar and unijunction transistors. 0934.20

E/ET 214B
Electronics II
4 units, 3 hours lecture, 3 hours laboratory (GR)
Prerequisite: E/ET 214A
Basic concepts of electronics: Programmable unijunction transistors (PUT), silicon-controlled rectifiers, diacs/triacs (THYRISTORS), optoelectronic devices, operational amplifiers, and 555 precision timer IC. 0934.20

E/ET 216A
Industrial Control I
4 units, 3 hours lecture, 3 hours laboratory (GR)
Principles of industrial control: Motor controls, motor starters, and pilot devices; relays and contactors; installing control systems; DC and AC motor controls. 0934.40

E/ET 216B
Industrial Control II
4 units, 3 hours lecture, 3 hours laboratory (GR)
Prerequisite: E/ET 216A
Continuation of E/ET 216A: Controller input/output and programming, processor unit numbering system, ladder logic diagrams, timers and counters, and troubleshooting. 0934.40

E/ET 217
Residential House Wiring
3 units, 2 hours lecture, 3 hours laboratory (GR)
Safely wiring a single-family dwelling per the National Electrical Code using laboratory mock-up walls: Lighting and appliance branch circuits, special purpose outlets, service-entrance calculations, and grounding; project estimating and pricing. 0934.40

E/ET 218
Commercial Electrical Wiring
3 units, 2 hours lecture, 3 hours laboratory (GR)
Commercial electrical wiring: Emphasis on safety and branch circuit requirements and installation for both power and lighting; main electrical services and calculations, grounding, fault current, transformers and motors (both single and three-phase), and motor controls. 0934.40

E/ET 221
Motors and Drives
2 units, 1.5 hours lecture, 1.5 hours laboratory (GR)
Prerequisite: ECT 11
Introduction to the application of motors and drives used in commercial and industrial refrigeration, air conditioning, heating and ventilation: Different types of motors and drives and their applications, including electric and magnetic (VFD) variable frequency drives for improved efficiency control and energy savings. 0934.40

E/ET 222
Photovoltaic NABCEP Test Preparation
2 units, 2 hours lecture (GR)
Recommended preparation: E/ET 208
Preparation of NABCEP certification exam: Comprehension and application of key terms and concepts of photovoltaic (solar electric) system operation. 0934.40

E/ET 223
CAL-OSHA 30-Hour Construction Industry Training
2 units, 2 hours lecture (GR)
CAL-OSHA 30-hour training: Industry Standards for regulations covered by the Occupational Safety and Health Administration (OSHA) Standards for the Construction Industry 29 CFR 1926. 0934.40

E/ET 224
Introduction to Security and Fire Alarm Systems
3 units, 2 hours lecture, 3 hours laboratory (GR)
Recommended preparation: E/ET 203
Introduction to Security and Fire Alarm systems: Security and Fire Alarm systems design, installation, commissioning, and troubleshooting. 0934.40

E/ET 225
Sound and Communication Technology
3 units, 2 hours lecture, 3 hours laboratory (GR)
Recommended preparation: E/ET 203
Introduction to Sound and communication Industry: Electrical code, system wiring methods, fastening devices, electrical conductors, circuits, voltage and data communication, and system devices. 0934.40

Electricity/Electronics Technology

E/ET 226
Lighting Efficiency Technology
3 units, 3 hours lecture (GR)
Recommended preparation: E/ET 203
Current technology in energy efficient lighting control and systems: Latest advances in lamp, ballast, luminaire and control technologies as well as recent developments in energy legislation. 0934.40

E/ET 248GA-MZ
Selected Topics in Electricity/Electronics Technology
.5-0 units, 0-9 hours lecture, 0-27 hours laboratory (GR)
See section on Selected Topics. 0934.00