

# PSET

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## Courses

### **PSET 110 Power Systems Computer Aided Drafting** **3 Credits. 2 Lecture Hours. 3 Lab Hours.**

A course on computer aided drafting and design for power systems. Topics include: CAD fundamentals; and designing, modifying, and editing documents that apply to the power systems industry. Prerequisites: ENG 085, and MAT 096 or MAT 124, or appropriate placements

### **PSET 120 Geographic Information Systems (GIS)** **3 Credits. 2 Lecture Hours. 2 Lab Hours.**

A course on skills used for computer-aided electronic mapping as applied to the power grid system. Topics include: power grid mapping, map databases, spatial positioning, analysis, modeling, and visualization. Prerequisites: PSET 110

### **PSET 130 National Electric Code and National Electric Safety Code**

#### **2 Credits. 1 Lecture Hour. 2 Lab Hours.**

A course on the purpose, intent, use, and enforcement of the National Electric Code (NEC) and the National Electric Safety Code (NESC) in electrical design and in specifications of equipment used in power systems. Prerequisites: EET 131

### **PSET 140 Power Systems Foundations** **3 Credits. 2 Lecture Hours. 2 Lab Hours.**

An introduction to electrical power systems from generation to utilization. Topics include: purpose, composition, operating characteristics, and design considerations of power system components; power quality and safety; fundamentals of AC waveforms including single and three phase connections, voltage and current calculations; per-unit representation; and power factor. Prerequisites: EET 131

### **PSET 150 Electrical Power Technology Studies: Adv** **30 Credits. 30 Lecture Hours. 0 Lab Hour.**

Students complete apprenticeship education, post-secondary education, or work experience related to skills used in the electrical power industry. Prerequisites: Program Chair consent  
Instructor Consent Required

### **PSET 191 Part-Time Cooperative Education 1: Power Systems Engineering Technology**

#### **1 Credit. 1 Lecture Hour. 20 Lab Hours.**

Students seeking an associate's degree participate in their first part-time field learning experience related to their degree. Students are expected to register for academic courses during the same semester. Students must follow cooperative education policies and procedures to earn credit. Grades issued are Satisfactory or Unsatisfactory. Prerequisites: None

### **PSET 192 Part-Time Cooperative Education 2: Power Systems Engineering Technology**

#### **1 Credit. 1 Lecture Hour. 20 Lab Hours.**

Students seeking an associate's degree participate in their second part-time field learning experience related to their degree. Students are expected to register for academic courses during the same semester. Students must follow cooperative education policies and procedures to earn credit. Grades issued are Satisfactory or Unsatisfactory. Prerequisites: PSET 191

### **PSET 193 Part-Time Cooperative Education 3: Power Systems Engineering Technology**

#### **1 Credit. 1 Lecture Hour. 20 Lab Hours.**

Students seeking an associate's degree participate in their third part-time field learning experience related to their degree. Students are expected to register for academic courses during the same semester. Students must follow cooperative education policies and procedures to earn credit. Grades issued are Satisfactory or Unsatisfactory. Prerequisites: PSET 192

### **PSET 194 Part-Time Cooperative Education 4: Power Systems Engineering Technology**

#### **1 Credit. 1 Lecture Hour. 20 Lab Hours.**

Students seeking an associate's degree participate in their fourth part-time field learning experience related to their degree. Students are expected to register for academic courses during the same semester. Students must follow cooperative education policies and procedures to earn credit. Grades issued are Satisfactory or Unsatisfactory. Prerequisites: PSET 193

### **PSET 195 Part-Time Cooperative Education 5: Power Systems Engineering Technology**

#### **1 Credit. 1 Lecture Hour. 20 Lab Hours.**

Students seeking an associate's degree participate in their fifth part-time field learning experience related to their degree. Students are expected to register for academic courses during the same semester. Students must follow cooperative education policies and procedures to earn credit. Grades issued are Satisfactory or Unsatisfactory. Prerequisites: PSET 194

### **PSET 196 Part-Time Cooperative Education 6: Power Systems Engineering Technology**

#### **1 Credit. 1 Lecture Hour. 20 Lab Hours.**

Students seeking an associate's degree participate in their sixth part-time field learning experience related to their degree. Students are expected to register for academic courses during the same semester. Students must follow cooperative education policies and procedures to earn credit. Grades issued are Satisfactory or Unsatisfactory. Prerequisites: PSET 195

### **PSET 225 Industrial and Commercial Power Design** **4 Credits. 3 Lecture Hours. 3 Lab Hours.**

A course on design of industrial and commercial building electrical distribution systems. Topics include: load calculations, wiring devices, overcurrent protection, conductors, conduit and raceway systems, panelboards and switchboards, voltage drop calculations, grounding and bonding, branch circuit and feeder design, and motor circuits. Prerequisites: PSET 140

**PSET 250 Power Transmission and Distribution Design****3 Credits. 2 Lecture Hours. 3 Lab Hours.**

A course on overhead and underground transmission and distribution systems. Topics include: operation, maintenance, and monitoring of transmission and distribution equipment; transmission line parameters; power flow; design of conductor support structures; overview of system protection; smart grid concepts; and data collection mechanisms.

Prerequisites: PSET 140

**PSET 260 Stationary Engineering with Instrumentation and Controls****4 Credits. 3 Lecture Hours. 3 Lab Hours.**

A course on steam plant operation and associated instrumentation and controls. Topics include: basic components, maintenance requirements for utility boilers, combined cycle and cogeneration systems, nuclear steam generation, standard pressure and horsepower calculations, and control of major steam boiler processes.

Prerequisites: EMET 140 and EMET 240

**PSET 275 Protective Relays and Controls****3 Credits. 2 Lecture Hours. 3 Lab Hours.**

A course on protective relays and their application to electric transmission and distribution systems. Topics include: power regulation and communication requirements; electro-mechanical relays and breakers, microprocessor relays and synchrophasors; transformers; transmission and distribution lines; capacitor banks; and regulator protection.

Prerequisites: EMET 240 and PSET 225

**PSET 290 Power Systems Capstone****2 Credits. 1 Lecture Hour. 2 Lab Hours.**

Students work in teams to complete a design project. Topics include: design concepts, modeling, detail and assembly drawings, bill of materials, vendors, costs, and manufacture of prototype.

Prerequisites: PSET 220 and PSET 225

**PSET 291 Full-Time Cooperative Education 1: Power Systems Engineering Technology****2 Credits. 1 Lecture Hour. 40 Lab Hours.**

Students seeking an associate's degree participate in their first full-time field learning experience related to their degree. Students must follow cooperative education policies and procedures to earn credit. Grades issued are Satisfactory or Unsatisfactory.

Prerequisites: None

**PSET 292 Full-Time Cooperative Education 2: Power Systems Engineering Technology****2 Credits. 1 Lecture Hour. 40 Lab Hours.**

Students seeking an associate's degree participate in their second full-time field learning experience related to their degree. Students must follow cooperative education policies and procedures to earn credit.

Grades issued are Satisfactory or Unsatisfactory.

Prerequisites: PSET 291

**PSET 293 Full-Time Cooperative Education 3: Power Systems Engineering Technology****2 Credits. 1 Lecture Hour. 40 Lab Hours.**

Students seeking an associate's degree participate in their third full-time field learning experience related to their degree. Students must follow cooperative education policies and procedures to earn credit.

Grades issued are Satisfactory or Unsatisfactory.

Prerequisites: PSET 292

**PSET 294 Internship 1: Power Systems Engineering Technology****2 Credits. 1 Lecture Hour. 40 Lab Hours.**

Students seeking an associate's degree participate in their first unpaid field learning experience related to their degree. Students must follow applicable policies and procedures to earn credit. Grades issued are Satisfactory or Unsatisfactory.

Prerequisites: EMET 140

**PSET 295 Internship 2: Power Systems Engineering Technology****2 Credits. 1 Lecture Hour. 40 Lab Hours.**

Students seeking an associate's degree participate in their second unpaid field learning experience related to their degree. Students must follow applicable policies and procedures to earn credit. Grades issued are Satisfactory or Unsatisfactory.

Prerequisites: PSET 294