

# ENERGY SYSTEMS (ESP)

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## ESP 101 (3 credit hours)

### Introduction to Energy Systems

Introduces energy generating systems including solar, wind, bioenergy, geothermal, hydroelectric, hydrogen-based, petroleum-based, coal, and nuclear. Lecture: 3.0 credits (45 contact hours).

**Attributes:** Technical

**Components:** LEC: Lecture

## ESP 213 (3 credit hours)

### Power Plant Operations III

Provides detailed training in the operations of water, steam, turbines and generator systems of a coal-fired (fossil fueled) power plant stressing proper operation during normal operations, startups and shutdowns, and transient conditions. Lecture: 3.0 credits (45 contact hours).

**Pre-requisite:** ESP 211 or consent of the instructor.

**Attributes:** Technical

**Components:** LEC: Lecture

## ESP 214 (3 credit hours)

### Power Plant Operations IV

Provides detailed training in the operation of the auxiliary components of a power plant, including valves, traps, actuators, pumps, couplings, air compressors, seals, lubrication systems, air ejectors, heat exchangers, and switches. Proper operation of each type of component and its function in the plant will be stressed. Lecture: 3.0 credits (45 contact hours).

**Pre-requisite:** ESP 211 or consent of the instructor.

**Attributes:** Technical

**Components:** LEC: Lecture

## ESP 220 (3 credit hours)

### Power Plant Thermodynamics

Introduces basic thermodynamic concepts and the applications of thermodynamics in a fossil-fueled power plant. Lecture: 3.0 credits (45 contact hours).

**Pre-requisite:** PHY 151 or higher.

**Attributes:** Technical

**Components:** LEC: Lecture

## ESP 280 (3 credit hours)

### Capstone in Energy Systems

Serves as the capstone course for the Energy Systems program by integrating prior learning into a single integrated learning experience. Requires planning, research, and completion of both individual and team-based reports based on real-world problems or projects in the Energy Systems field. Lecture: 3.0 credits (45 contact hours).

**Pre-requisite:** ESP 213.

**Attributes:** Technical

**Components:** LEC: Lecture