

# INDUSTRIAL ELECTRICITY

## Programs

- Industrial Electricity Certificate in Applied Science (<https://catalog.gvltec.edu/school-aviation-construction-transportation-technologies/industrial-electricity/industrial-electricity-certificate/>)

## Courses

### EEM 105 Basic Electricity (1-3-2)

*Offered Fall and Spring Semesters*

Prerequisite: Placement into ENG 100

This course is a survey of basic electrical principles, circuits and measurements.

### EEM 107 Industrial Computer Techniques (2-0-2)

*Offered Fall Semester*

Prerequisites: Placement into ENG 100 and MAT 155

This course is an introduction to microcomputers. Topics include definitions of computer types, hardware and software structure, movement of data and application of microcomputers.

### EEM 117 AC/DC Circuits I (3-3-4)

*Offered Fall and Spring Semesters*

Prerequisite: Placement into ENG 100

Pre- or Co-requisite: MAT 170 or higher

This course is a study of direct and alternating theory, Ohm's Law, series, parallel and combination circuits. Circuits are constructed and tested.

### EEM 118 AC/DC Circuits II (3-3-4)

*Offered Spring Semester*

Prerequisites: EEM 117, MAT 155 or higher

This course is a continuation of the study of direct and alternating current theory to include circuit analysis using mathematics and verified with electrical measurements.

### EEM 140 National Electrical Code (3-0-3)

*Offered Fall and Spring Semesters*

This course is a study of the National Electrical Code and is based on the latest codes as published by the National Fire Protection Association (NFPA).

### EEM 151 Motor Controls I (2-6-4)

*Offered Fall, Spring and Summer Semesters*

Prerequisite: EEM 105 or EEM 117

This course is an introduction to motor controls, including a study of the various control devices and wiring used in industrial processes.

### EEM 165 Residential/Commercial Wiring (3-3-4)

*Offered Fall and Summer Semesters*

Prerequisite: EEM 140

This course is a study of wiring methods and practices used in residential and commercial applications.

### EEM 166 Commercial/Industrial Wiring (3-3-4)

*Offered Spring and Summer Semesters*

Prerequisite: EEM 140

This course is a study of wiring methods and practices used in commercial and industrial applications.

### EEM 215 DC/AC Machines (1-6-3)

*Offered Fall and Spring Semesters*

Prerequisites: EEM 105

This course is a study of applications, operations and construction of DC and AC machines.

### EEM 221 DC/AC Drives (2-3-3)

*Offered Fall, Spring and Summer Semesters*

Prerequisite: EEM 117

This course covers the principles of operation and application of DC drives and AC drives.

### EEM 251 Programmable Controllers (2-3-3)

*Offered Fall, Spring and Summer Semesters*

Prerequisites: EEM 117, EEM 271

This course is an introduction to programmable control systems with emphasis on basic programming techniques. A variety of input/output devices and their applications are covered.

### EEM 252 Programmable Controller Applications (2-4-3)

*Offered Fall, Spring and Summer Semesters*

Prerequisite: EEM 251

This course covers the application of programmable controller theories and operation procedures. Topics such as interfacing data manipulation and report generation are covered. Programmable controller projects are constructed, operated and tested.

### EEM 271 Sensors and System Interfacing (1-3-2)

*Offered Spring Semester*

Prerequisite: EEM 117

This course includes an introduction to various types of sensors and how they interface with computers and programmable logic controllers. Emphasis is placed on interfacing the computer or controller with machines to accomplish a task.

### EEM 274 Technical/Systems Troubleshooting (2-6-4)

*Offered Fall, Spring and Summer Semesters*

Prerequisite: EEM 252

This course is a study of systematic approaches to troubleshooting and repair of electronic, electrical and electromechanical systems.