

2020-2021 TTC Catalog - Industrial Electricity-Electronics (EEM)

EEM 001 - EEM 001

Lec: 0 Lab: 0 Credit: *

Indicates credit given for industrial electricity/electronics course work transferred from another college for which there is no equivalent course at TTC. *Hours vary depending on external course.

Division: Engineering and Construction

EEM 107 - Industrial Computer Techniques

Lec: 2.0 Lab: 0 Credit: 2.0

Course Offered

Fall

Summer

This course is an introduction to microcomputers. Topics include definitions of computer types, hardware and software structure, movement of data, and applications of microcomputers. Emphasis will be placed on industry-standard software for the electrical and automated technologies industry.

Grade Type: Letter Grade

Division: Engineering and Construction

EEM 108 - Basic Industrial Skills I

Lec: 1.5 Lab: 1.5 Credit: 2.0

Course Offered

Summer

This course provides foundational knowledge for the development of craft skills and an understanding of basic safety, rigging and communication in the industrial work environment. An introduction to hand tools, power tools, blueprints and craft skills math is included. (Note: Course is aligned with NCCER Core Curriculum.)

Prerequisite

RWR 032

and

MAT 031

or appropriate test scores

Grade Type: Letter Grade

Division: Engineering and Construction

EEM 110 - Basic Industrial Skills II

Lec: 1.5 **Lab:** 1.5 **Credit:** 2.0

Course Offered

Summer

This course is a continuation of craft skills development, introducing more complex issues in safety, rigging and communication in the industrial work environment. Students further develop hands-on skills with hand tools, power tools, blueprints and craft skills math.

Prerequisite

MAT 031

or appropriate test scores

Grade Type: Letter Grade

Restrictions: Course is aligned with NCCER Core Curriculum.

Division: Engineering and Construction

EEM 113 - DC Circuits I

Lec: 1.5 **Lab:** 1.5 **Credit:** 2.0

Course Offered

Fall

Spring

This course is an introduction to the study of atomic theory related to electronics and circuit theory. It covers electrical parameters and units, Ohm's Law, Kirchhoff's voltage and current laws, power and energy. It also includes complex circuits and DC instruments. Students will construct and test circuits.

Prerequisite

RWR 100

and

MAT 032

or appropriate test scores

Grade Type: Letter Grade

Division: Engineering and Construction

EEM 114 - DC Circuits II

Lec: 1.5 **Lab:** 1.5 **Credit:** 2.0

Course Offered

Fall

Spring

This course is a continuation of the study of atomic theory related to more complex electronics and circuit theory. It includes advanced electrical parameters and units, Ohm's Law applications, additional Kirchhoff's voltage and current laws, along with new power and energy applications. Topics also include complex circuits and DC instruments. Students will construct and test circuits.

Prerequisite

EEM 113

Grade Type: Letter Grade

Division: Engineering and Construction

EEM 119 - AC Circuits I

Lec: 1.5 **Lab:** 1.5 **Credit:** 2.0

Course Offered

Fall

Spring

This course is an introduction to the study of the characteristics of alternating current and voltage in resistors, capacitors and inductors. It includes study of series, parallel and complex circuits. Students will construct and test circuits.

Prerequisite

EEM 114

Grade Type: Letter Grade

Division: Engineering and Construction

EEM 120 - AC Circuits II

Lec: 1.5 **Lab:** 1.5 **Credit:** 2.0

Course Offered

Spring
Summer

This course is a continuation of the study of the characteristics of alternating current and voltage in resistors, capacitors and inductors in more complex applications. New series, parallel and complex circuits are covered with emphasis on hands-on construction. Students will construct and test circuits.

Prerequisite

EEM 119

Grade Type: Letter Grade

Division: Engineering and Construction

EEM 129 - Solid State Devices I

Lec: 1.5 **Lab:** 1.5 **Credit:** 2.0

Course Offered

Fall
Spring

This course is an introduction to the study of semiconductor theory and common solid state devices. Students will construct and test circuits.

Prerequisite

EEM 114

Grade Type: Letter Grade

Division: Engineering and Construction

EEM 130 - Solid State Devices II

Lec: 1.5 **Lab:** 1.5 **Credit:** 2.0

Course Offered

Fall
Spring

This course is a continuation of the study of semiconductor theory and common solid state devices with new and more complex applications. Students will construct and test circuits.

Prerequisite

EEM 129

Grade Type: Letter Grade

Division: Engineering and Construction

EEM 138 - National Electrical Code I

Lec: 1.0 **Lab:** 3.0 **Credit:** 2.0

Course Offered

Spring
Summer

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

Prerequisite

EEM 164
and
EEM 168
and
EEM 174

Grade Type: Letter Grade

Division: Engineering and Construction

EEM 139 - National Electrical Code II

Lec: 1.0 **Lab:** 3.0 **Credit:** 2.0

Course Offered

Spring
Summer

This course is a continuation of the study of the National Electrical Code. Students will be required to identify violations of the Code in working applications and will demonstrate a working knowledge of the latest codes. Topics are based on the latest codes as published by the National Fire and Protection Association (NFPA).

Prerequisite

EEM 138

Grade Type: Letter Grade

Division: Engineering and Construction

EEM 151 - Motor Controls I

Lec: 2.0 **Lab:** 6.0 **Credit:** 4.0

Course Offered

Spring

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

Prerequisite

EEM 219

Grade Type: Letter Grade

Division: Engineering and Construction

EEM 163 - Residential Wiring I

Lec: 1.5 **Lab:** 1.5 **Credit:** 2.0

Course Offered

Fall

Spring

This course is an introduction to the study of wiring methods and practices used in residential applications.

Prerequisite

RWR 032

and

MAT 031

or appropriate test scores

Grade Type: Letter Grade

Division: Engineering and Construction

EEM 164 - Residential Wiring II

Lec: 1.5 **Lab:** 1.5 **Credit:** 2.0

Course Offered

Fall

Spring

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

Prerequisite

EEM 163

Grade Type: Letter Grade

Division: Engineering and Construction

EEM 167 - Commercial-Industrial Wiring I

Lec: 1.5 **Lab:** 1.5 **Credit:** 2.0

Course Offered

Fall
Summer

This course is an introduction to the study of wiring methods and practices in commercial and industrial applications.

Corequisite

RWR 032

and

MAT 031

or appropriate test scores

Grade Type: Letter Grade

Division: Engineering and Construction

EEM 168 - Commercial-Industrial Wiring II

Lec: 1.5 **Lab:** 1.5 **Credit:** 2.0

Course Offered

Fall
Summer

This course is a continuation of the study of advanced wiring methods and more complex practices in commercial and industrial applications.

Prerequisite

EEM 167

Grade Type: Letter Grade

Division: Engineering and Construction

EEM 173 - Electrical Installation I

Lec: 1.5 **Lab:** 1.5 **Credit:** 2.0

Course Offered

Fall
Spring

This course is an introduction to the study of electrical wiring techniques commonly used in commercial, industrial and residential applications. Emphasis will be placed on compliance with the National Electrical Code.

Prerequisite

RWR 032

and

MAT 031

or appropriate test scores

Grade Type: Letter Grade

Division: Engineering and Construction

EEM 174 - Electrical Installation II

Lec: 1.5 **Lab:** 1.5 **Credit:** 2.0

Course Offered

Fall

Spring

This course is the study of advanced electrical wiring techniques commonly used in more complex commercial, industrial and residential applications. Emphasis will be placed on compliance with the National Electrical Code.

Prerequisite

EEM 173

Grade Type: Letter Grade

Division: Engineering and Construction

EEM 218 - AC DC Machines with Electrical Codes I

Lec: 1.5 **Lab:** 1.5 **Credit:** 2.0

Course Offered

Summer

This course is an introduction to the study of AC and DC machines to include operational theory, applications and construction. Relevant sections of the National Electrical Code will also be covered.

Prerequisite

EEM 120

or

EET 113

Grade Type: Letter Grade

Division: Engineering and Construction

EEM 219 - AC DC Machines with Electrical Codes II

Lec: 1.5 **Lab:** 1.5 **Credit:** 2.0

Course Offered

Summer

This course is a continuation of the study of AC and DC machines to include complex and in-depth construction and application of operational theory. Relevant sections of the National Electrical Code will also be covered.

Prerequisite

EEM 218

Grade Type: Letter Grade

Division: Engineering and Construction

EEM 221 - DC AC Drives

Lec: 2.0 **Lab:** 3.0 **Credit:** 3.0

Course Offered

Spring

Summer

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

Prerequisite

EEM 114

Grade Type: Letter Grade

Division: Engineering and Construction

EEM 251 - Programmable Controllers

Lec: 2.0 **Lab:** 3.0 **Credit:** 3.0

Course Offered

Fall

Spring

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

Prerequisite

EEM 114

and

EEM 107

or

EET 113

and

EGR 110

Grade Type: Letter Grade

Division: Engineering and Construction

EEM 252 - Programmable Controllers Applications

Lec: 2.0 **Lab:** 3.0 **Credit:** 3.0

Course Offered

Fall

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.

Prerequisite

EEM 251

Grade Type: Letter Grade

Division: Engineering and Construction
