# ELECTRICAL ENGINEERING AND RELATED TECHNOLOGIES (EERT)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Grade Mode</th>
<th>Corequisite</th>
<th>Schedule Type</th>
<th>Contact Hours</th>
<th>Contact Hours</th>
<th>Grade Mode</th>
<th>Attributes</th>
</tr>
</thead>
<tbody>
<tr>
<td>EERT 12000</td>
<td>ELECTRICITY/ELECTRONICS WITH APPLICATIONS</td>
<td>3</td>
<td>Standard Letter</td>
<td>MATH 11010, MATH 19002</td>
<td>Lecture and Lab</td>
<td>3 lecture, 2 lab</td>
<td></td>
<td>Standard Letter</td>
<td>CTAG Electrical Engineer Technology</td>
</tr>
<tr>
<td>EERT 12001</td>
<td>ELECTRIC CIRCUITS I</td>
<td>4</td>
<td>Standard Letter</td>
<td>MATH 11012 or 19002</td>
<td>Lecture and Lab</td>
<td>2 lecture, 2 lab</td>
<td>Standard Letter</td>
<td>TAG Engineering Technology</td>
<td></td>
</tr>
<tr>
<td>EERT 12005</td>
<td>ELECTRICAL/ELECTRONIC DRAWING</td>
<td>2</td>
<td>Standard Letter</td>
<td></td>
<td>Lecture</td>
<td>2 lecture</td>
<td>Standard Letter</td>
<td>TAG Engineering Technology</td>
<td></td>
</tr>
<tr>
<td>EERT 12010</td>
<td>INTRODUCTION TO ELECTRONICS</td>
<td>4</td>
<td>Standard Letter</td>
<td></td>
<td>Combined Lecture and Lab</td>
<td>2 lecture, 2 lab</td>
<td>Standard Letter</td>
<td>TAG Engineering Technology</td>
<td></td>
</tr>
<tr>
<td>EERT 20192</td>
<td>OVERHEAD LINE TECHNOLOGY III PRACTICUM (ELR)</td>
<td>5</td>
<td>Standard Letter</td>
<td>EERT 10192 and special approval</td>
<td>Practicum or Internship</td>
<td>15 other</td>
<td>Standard Letter</td>
<td>Experiential Learning Requirement</td>
<td></td>
</tr>
<tr>
<td>EERT 20292</td>
<td>OVERHEAD LINE TECHNOLOGY IV PRACTICUM (ELR)</td>
<td>5</td>
<td>Standard Letter</td>
<td>EERT 20192 and special approval</td>
<td>Practicum or Internship</td>
<td>15 other</td>
<td>Standard Letter</td>
<td>Experiential Learning Requirement</td>
<td></td>
</tr>
<tr>
<td>EERT 21010</td>
<td>ENGINEERING AND PROFESSIONAL ETHICS</td>
<td>3</td>
<td>None.</td>
<td></td>
<td>Individual Investigation</td>
<td>3 lecture</td>
<td>Standard Letter</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EERT 21096</td>
<td>INDIVIDUAL INVESTIGATION IN ELECTRICAL/ENGINEERING TECHNOLOGY</td>
<td>1-4</td>
<td>None.</td>
<td></td>
<td>Individual Investigation</td>
<td>1-4 other</td>
<td>Standard Letter</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EERT 22000</td>
<td>ELECTRICITY/ELECTRONICS WITH APPLICATIONS</td>
<td>3</td>
<td>Standard Letter</td>
<td></td>
<td>Lecture</td>
<td>3 lecture</td>
<td>Standard Letter</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
EERT 22002 INDUSTRIAL CONTROLS 3 Credit Hours
Introduction to control of AC and DC machinery by electromechanical and solid state devices. Study of circuits, troubleshooting methods and logic systems.
Prerequisite: EERT 12010 or EERT 22000; and special approval.
Schedule Type: Lecture
Contact Hours: 3 lecture
Grade Mode: Standard Letter

EERT 22004 DIGITAL SYSTEMS 4 Credit Hours
Modern integrated digital logic families. Analysis and design of digital circuits such as gates, multivibrators, comparators, counters, registers including interface, control memory and computer circuits. Programmable logic controllers and integrated circuit technologies.
Prerequisite: None.
Schedule Type: Combined Lecture and Lab
Contact Hours: 3 lecture, 2 lab
Grade Mode: Standard Letter
Attributes: CTAG Electrical Engineer Technology

EERT 22005 ELECTRONIC INSTRUMENTATION 3 Credit Hours
Understanding of automation control and process characteristics. Application of various type of measurement devices & control equipments.Use of modern simulation software for process control and troubleshooting.
Prerequisite: EERT 12010.
Schedule Type: Combined Lecture and Lab
Contact Hours: 2 lecture, 2 lab
Grade Mode: Standard Letter

EERT 22006 ELECTRICAL MACHINES 3 Credit Hours
Introduction to transformer action, losses and efficiency. Fundamentals of DC and AC motors and generators and three phase systems.
Prerequisite: EERT 12001.
Schedule Type: Lecture
Contact Hours: 3 lecture
Grade Mode: Standard Letter

EERT 22007 INDUSTRIAL MOTOR CONTROL AND APPLICATION 3 Credit Hours
Application and use of DC, single and polyphase electric motors and industrial control systems. Construction, troubleshooting and operation of starting systems is emphasized.
Prerequisite: EERT 22000.
Schedule Type: Combined Lecture and Lab
Contact Hours: 2 lecture, 2 lab
Grade Mode: Standard Letter

EERT 22011 ELECTRONIC SYSTEMS 2 Credit Hours
Continuation of EERT 12010. Frequency effects, Miller’s Theorem, decibel notation and negative feedback, Oscillators, Op-amps, circuits and applications, Thyristors and electronically regulated power supplies.
Prerequisite: EERT 12010.
Schedule Type: Combined Lecture and Lab
Contact Hours: 1 lecture, 2 lab
Grade Mode: Standard Letter
Attributes: TAG Engineering Technology

EERT 22014 MICROPROCESSORS AND ROBOTICS 3 Credit Hours
An introduction to microprocessor system fundamentals, number systems, binary codes, hexa-decimal codes, Programming fundamentals in C, C++ software, Microcontroller hardware architecture and instruction set, with applications to robot systems motor control, sensors.
Prerequisite: none.
Schedule Type: Combined Lecture and Lab
Contact Hours: 2 lecture, 2 lab
Grade Mode: Standard Letter
Attributes: TAG Engineering Technology

EERT 22015 ROBOTICS AND ADVANCED MICROSYSTEMS 3 Credit Hours
An advanced course in microprocessor software and hardware. Input/output devices and interfacing with applications to robotics. Troubleshooting and design of microprocessor controlled systems.
Prerequisite: EERT 22014.
Schedule Type: Lecture
Contact Hours: 3 lecture
Grade Mode: Standard Letter

EERT 22018 PC/NETWORK ENGINEERING AND TROUBLESHOOTING 3 Credit Hours
Covers the service, maintenance, upgrade and optimization of personal computers. Specification, installation and maintenance of local area networks is covered. Students learn communication protocols and network architecture. Two lectures and two labs.
Prerequisite: none.
Schedule Type: Combined Lecture and Lab
Contact Hours: 2 lecture, 2 lab
Grade Mode: Standard Letter

EERT 22019 SPECIAL TOPICS IN ELECTRICAL/ELECTRONIC AND RELATED ENGINEERING TECHNOLOGIES 1-3 Credit Hours
(Repeatable for credit)Special topics in electrical/electronic engineering technology.
Prerequisite: Permission.
Schedule Type: Lecture
Contact Hours: 1-3 lecture
Grade Mode: Standard Letter

EERT 23000 SENSORS 2 Credit Hours
A study of sensors, transducers, relays, solenoids, servomotors, actuators, lasers, LEDs, photonic and temperature sensors and electronic devices in electromechanical control.
Prerequisite: Sophomore standing.
Schedule Type: Combined Lecture and Lab
Contact Hours: 2 other
Grade Mode: Standard Letter
EERT 32003  TECHNICAL COMPUTING   3 Credit Hours
A hands-on introduction to computation, through object-oriented
programming and problem solving. Programming in the C++ language.
Corequisite: MATH 11010.
Schedule Type: Lecture
Contact Hours: 3 lecture
Grade Mode: Standard Letter

EERT 32005  INSTRUMENTATION   3 Credit Hours
Introduction to modern industrial controls, interfacing devices, transducer
systems, and process control methods.
Prerequisite: Junior Standing
Schedule Type: Combined Lecture and Lab
Contact Hours: 3 lecture, 1 lab
Grade Mode: Standard Letter