Electrical Engineering Technology - Electronics Systems Major (ESET)

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Graduates of the Electrical Engineering Technology - Electronics Systems Major are prepared to pursue careers in diverse engineering-related fields such as computer design and repair, digital systems, microcomputer systems, microelectronics, and telecommunications.

Graduates earn an Associate of Applied Science degree. The curriculum also provides an effective foundation for transfer into a related bachelor's degree program.

For more information, please contact the Engineering and Information Technologies Division at (513) 569-1743.

To apply for this program at Cincinnati State, visit the Admissions (http://www.cincinnatistate.edu/academics/admission/) section of the College website.

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Semester 1		**Lec**	**Lab**	**Credits**
EET 131	Circuit Analysis 1 (**B**)	3	2	4
ENG 101	English Composition 1 (**G**)	3	0	3
FYE 1XX First Year Experience (**B**)		1	0	1
MAT XXX Mathematics Elective 1 (**G**)		3	2	4
Semester 2				
EET 121	Digital Systems 1 (**T**)	2	3	3
EET 132	Circuit Analysis 2 (**T**)	3	2	4
CIT 190	Career Preparation: Engineering and Information Technologies (**B**)	1	0	1
MAT XXX Mathematics Elective 2 (**B**)		3	2	4
Semester 3				
EET 291	Full-Time Cooperative Education 1: Electronics Engineering Technology (**T**)	1	40	2
NETC 121	Network Communications 1 (**B**)	2	2	3
PHY XXX Physics Elective (**G**)		3	2	4
Semester 4				
EET 122	Digital Systems 2 (**T**)	2	3	3
ESET 251	Electronics (**T**)	3	3	4
IT 101	Programming 1 (**B**)	2	3	3
ENG 10X English Elective (**G**)		3	0	3
Semester 5				
ESET 290	Electronic Systems Engineering Technology Capstone Project (**T**)	2	4	4
ESET 220	Microprocessors and Microcontrollers (**T**)	3	3	4
EMET XXX Electro-Mechanical Engineering Technology Elective (**T**)		2	3	3
EET XXX Electrical Engineering Techology Elective 1 (**T**)		2	3	3
Semester 6				
EET XXX Electrical Engineering Technology Elective 2 (**T**)		1	40	2
ECO 1XX Economics Elective (**G**)		3	0	3
Total Credits:		**48**	**117**	**65**

Electives

First Year Experience Elective		
FYE 100	College Success Strategies: Overview	1
FYE 105	College Success Strategies: Overview and Application	2
FYE 110	College Success Strategies: Practice and Application	3
Mathematics Elective		**8**
Take one of the following series:		
MAT 125 & MAT 126	Algebra and Trigonometry and Functions and Calculus	
Or		
MAT 251 & MAT 252	Calculus 1 and Calculus 2	
Physics Elective		
PHY 151	Physics 1: Algebra and Trigonometry-Based	4
PHY 201	Physics 1: Calculus-Based	5

English Composition Elective		
ENG 102	English Composition 2: Contemporary Issues	3
ENG 103	English Composition 2: Writing about Literature	3
ENG 104	English Composition 2: Technical Communication	3
ENG 105	English Composition 2: Business Communication	3
Electro-Mechanical Engineering Technology Elective		
EMET 245	Laser 1	3
EMET 141	Programmable Logic Controllers	3
EMET 252	Motors, Motor Controls, and Variable Drives	3
EMET 270	Robotics and Servomechanisms	4
Electrical Engineering Technology Electives		**5**
Any EET (2XX level)		
or, any ESET (2XX level)		
or, any PSET		
or, any EMET not used to fulfill the Electro-Mechanical Engineering Technology Elective		
Economics Elective		
ECO 105	Principles of Microeconomics	3
ECO 110	Principles of Macroeconomics	3

Some courses are offered in alternative versions identified with a letter after the course number-- for example, ENG 101 and ENG 101A.

- This curriculum displays only course numbers without the added letter.
- The alternative version, when available, meets the requirements of the course version without the added letter.

The letters G, B, and T (displayed after course titles or elective descriptions) identify types of courses required by the Ohio Department of Higher Education as part of an associate's degree curriculum.

G = General Education course in this curriculum

B = Basic Skills course in this curriculum

T = Technical course in this curriculum

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- Ability to select and apply knowledge of mathematics, science, engineering, and technology to engineering technology problems that require the application of principles and applied procedures or methodologies.
- Ability to function effectively as a member or leader on a technical team.
- Ability to apply written, oral, and graphical communication in both technical and non-technical environments; and ability to identify and use appropriate technical literature.
- Ability to conduct standard tests and measurements; to conduct, analyze, and interpret experiments; and to apply experimental results to improve processes.
- Commitment to quality, timeliness, and continuous improvement.
- Ability to apply project management techniques to electrical/electronic(s) systems development.
- Proficiency in the application of circuit analysis and design, computer programming, associated software, analog and digital electronics, microcontroller technology, and engineering standards to the building, testing, operation, and maintenance of electrical/electronic(s) systems.
- Ability to integrate and synthesize technical information to resolve discrepancies requiring electrical or electronic knowledge.

Faculty

Program Chair

Ralph Whaley, Jr., PhD
ralph.whaley@cincinnatistate.edu

Co-op Coordinator

Kimberly Richards, EdD
kimberly.richards@cincinnatistate.edu

Advisors

Wendy Steinberg, MS
wendy.steinberg@cincinnatistate.edu

Carole Womeldorf, PhD
carole.womeldorf@cincinnatistate.edu

EET Courses

EET 100 Introduction to Electrical Engineering Technology
2 Credits. 1 Lecture Hour. 2 Lab Hours.
An introduction to concepts and measuring skills for the electronics field. Topics include: current, voltage, power, Ohm's law, series circuits, meter reading, software simulation use, and circuit construction.
Prerequisites: MAT 093 or appropriate placement

EET 101 Electronic Fundamentals 1
3 Credits. 2 Lecture Hours. 3 Lab Hours.
A course on electrical fundamentals for non-electrical majors. Topics include: DC and AC circuit theory, electrical motors and controls, electromagnetic devices, and transformers.
Prerequisites: MAT 096 or MAT 124, and ENG 085, or appropriate placements

EET 121 Digital Systems 1
3 Credits. 2 Lecture Hours. 3 Lab Hours.
A course on analyzing, designing, and troubleshooting digital logic circuits. Topics include: basic gates and programmable logic devices (PLDs); number systems and codes; Boolean algebra; circuit simplification; and functions of logic circuits, latches, flip-flops, counters, timers, and memory.
Prerequisites: EET 131, and MAT 124 (minimum grade C) or appropriate placement

EET 122 Digital Systems 2
3 Credits. 2 Lecture Hours. 3 Lab Hours.
A continuation of EET 121. Topics include: counter design and cascading, shift registers, PLD applications, microprocessor registers, input/output (I/O), busses, direct memory access (DMA), memory expansion, and assembly language programming.
Prerequisites: EET 121

EET 131 Circuit Analysis 1
4 Credits. 3 Lecture Hours. 2 Lab Hours.
A course on DC electric circuits. Topics include: current, voltage, resistance, and power; laws applied to series, parallel, and series-parallel circuits; Thevenin's, Superposition, and Norton's theorems; steady state and transient behavior of capacitive and inductive devices; and magnetic properties.
Prerequisites: MAT 124 (minimum grade C) or appropriate placement
Ohio Transfer Assurance Guide Approved

Ohio Career-Technical Assurance Guide Approved

EET 132 Circuit Analysis 2
4 Credits. 3 Lecture Hours. 2 Lab Hours.
A continuation of EET 131. Topics include: sinusoidal wave characteristics; complex numbers; phasors; transformers; RC, RL, and RLC networks; filter networks; three-phase and poly-phase systems; and power factor analysis.
Prerequisites: EET 131, and MAT 125 (minimum grade C) or appropriate placement
Ohio Transfer Assurance Guide Approved

EET 191 Part-Time Cooperative Education 1: Electronics 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

EET 192 Part-Time Cooperative Education 2: Electronics 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: EET 191

EET 193 Part-Time Cooperative Education 3: Electronics 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: EET 192

EET 194 Part-Time Cooperative Education 4: Electronics 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: EET 193

EET 195 Part-Time Cooperative Education 5: Electronics 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: EET 194

EET 196 Part-Time Cooperative Education 6: Electronics 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: EET 195

EET 291 Full-Time Cooperative Education 1: Electronics 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

EET 292 Full-Time Cooperative Education 2: Electronics 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: EET 291

EET 293 Full-Time Cooperative Education 3: Electronics 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: EET 292

EET 294 Internship 1: Electronics 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: EET 131 and CIT 190

EET 295 Internship 2: Electronics 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: EET 294

ESET Courses

ESET 220 Microprocessor Systems
4 Credits. 3 Lecture Hours. 2 Lab Hours.
A course on designing, programming, and troubleshooting microprocessor systems and applications. Topics include: assembly language programming, interrupt and polled input/output (I/O), interrupt service routines, parallel ports, timer functions, serial interfaces, analog-to-digital (A/D) converters, and external hardware interfaces.
Prerequisites: EET 122

ESET 251 Electronics
4 Credits. 3 Lecture Hours. 3 Lab Hours.
A course on semiconductor and amplifier theory and application. Topics include: diode circuits and basic power supplies; bipolar transistor, field-effect transistor (FET), thyristor, and operational amplifier theory; inverters; circuit construction; and troubleshooting.
Prerequisites: EET 132
Ohio Transfer Assurance Guide Approved

ESET 290 Electronic Systems Engineering Technology Capstone Project
4 Credits. 2 Lecture Hours. 4 Lab Hours.
Students design a system using analog and digital electronics concepts, and prepare and deliver a professional presentation of their completed project. Topics include: design theory, feasibility study, engineering economics, and presentation skills.
Prerequisites: EET 122 and ESET 251