ELECTRICAL ENGINEERING TECHNOLOGY

Courses

EET 1003 Introduction to Microcomputer Programming  
Prerequisites: Consent of instructor.  
Description: Programming a microcomputer using a spreadsheet and in BASIC. Application of algorithms to solve defined problems and an introduction to the numerical limitations of small machines. Previously offered as ECT 1003. 
Credit hours: 3  
Contact hours: Lecture: 2 Lab: 2 Contact: 4  
Levels: Undergraduate  
Schedule types: Lab, Lecture, Combined lecture and lab  
Department/School: Engineering Technology  

EET 1101 Fundamentals of DC Circuits Lab  
Prerequisites: Consent of instructor.  
Description: Elementary principles of dc electricity laboratory for Non-EET students who have taken a dc circuits course without a lab component. This is the same curriculum and lab experience that students would experience taking EET 1114. May not be used for degree credit with EET 1134 or EET 1104. 
Credit hours: 1  
Contact hours: Lab: 3 Contact: 3  
Levels: Undergraduate  
Schedule types: Lab  
Department/School: Engineering Technology  

EET 1104 Fundamentals of Electricity  
Prerequisites: Concurrent enrollment in MATH 2123 or MATH 2144 or Consent of Instructor.  
Description: Elementary principles of electricity covering basic electric units. Ohm’s law, Kirchoff’s law, circuit solutions, network solutions, magnetism, inductance and capacitance. Previously offered as ECT 1104. May not be used for degree credit with EET 1134 or EET 1101. 
Credit hours: 4  
Contact hours: Lecture: 3 Lab: 3 Contact: 6  
Levels: Undergraduate  
Schedule types: Lab, Lecture, Combined lecture and lab  
Department/School: Engineering Technology  

EET 1134 Fundamentals of DC Circuits  
Prerequisites: Concurrent enrollment in MATH 2123 or MATH 2144 or consent of instructor.  
Description: Elementary principles of dc electricity laboratory for Non-EET students covering basic electrical units, Ohm’s Law, Kirchoff’s Law, circuit solutions, network solutions, magnetism, inductance and capacitance. May be substituted for EET 1104 and grade of “B” or better and consent of the department. May not be used for degree credit with EET 1101. 
Credit hours: 4  
Contact hours: Lecture: 3 Lab: 3 Contact: 6  
Levels: Undergraduate  
Schedule types: Lab, Lecture, Combined lecture and lab  
Department/School: Engineering Technology  

EET 1201 Fundamentals of AC Circuits Lab  
Prerequisites: “C” or better in EET 1104 OR “C” or better in EET 1134 or consent of instructor.  
Description: Elementary principles of ac electricity laboratory for Non-EET students who have taken an ac circuits course without a lab component. This is the same curriculum and lab experience that students would experience taking EET 1214. May not be used for degree credit with EET 1214 or EET 1244.  
Credit hours: 1  
Contact hours: Lab: 3 Contact: 3  
Levels: Undergraduate  
Schedule types: Lab  
Department/School: Engineering Technology  

EET 1214 Fundamentals of AC Circuits  
Prerequisites: MATH 2123 or MATH 2144 and EET 1104 or EET 1134.  
Description: Elementary principles of ac electricity laboratory for Non-EET students covering basic electrical units, The use of network theorems and phasors, coupled circuits, resonance, filters and power will be studied. May be substituted for EET 1244 with grade of “B” or better and consent of the department. May not be used for degree credit with EET 1201.  
Credit hours: 4  
Contact hours: Lecture: 3 Lab: 3 Contact: 6  
Levels: Undergraduate  
Schedule types: Lab, Lecture, Combined lecture and lab  
Department/School: Engineering Technology  

EET 1244 Circuit Analysis I  
Prerequisites: Concurrent enrollment in MATH 2123 or MATH 2144 or “B” or better in EET 1134.  
Description: Analysis of AC electric circuits. The use of network theorems and phasors, coupled circuits, resonance, filters, and power. Course previously offered as ECT 1244. May not be used for degree credit with EET 1214 or EET 1201.  
Credit hours: 4  
Contact hours: Lecture: 3 Lab: 3 Contact: 6  
Levels: Undergraduate  
Schedule types: Lab, Lecture, Combined lecture and lab  
Department/School: Engineering Technology  

EET 2303 Technical Programming  
Prerequisites: Consent of instructor.  
Description: Introduction to machine programming using industrial standard languages, emphasis on problems from science and technology. Course previously offered as ECT 2303.  
Credit hours: 3  
Contact hours: Lecture: 3 Contact: 3  
Levels: Undergraduate  
Schedule types: Lecture  
Department/School: Engineering Technology  

EET 2544 Pulse and Digital Techniques  
Prerequisites: EET 1104 or equivalent may be taken concurrently.  
Description: Electronic circuits used in digital control and computation. Pulse generation, Boolean algebra and logic circuits. Course previously offered as ECT 2544.  
Credit hours: 4  
Contact hours: Lecture: 3 Lab: 2 Contact: 5  
Levels: Undergraduate  
Schedule types: Lab, Lecture, Combined lecture and lab  
Department/School: Engineering Technology
### EET 2635 Solid State Devices and Circuits
**Prerequisites:** EET 1244 and MATH 2123 or equivalent which may be taken concurrently.

**Description:** Diodes, transistors, LSI linear devices; their operation and applications in electronic circuits. Course previously offered as ECT 2635.

**Credit hours:** 5  
**Contact hours:** Lecture: 4 Lab: 3 Contact: 7  
**Levels:** Undergraduate  
**Schedule types:** Lab, Lecture, Combined lecture and lab  
**Department/School:** Engineering Technology

### EET 3005 Electronics Analysis I
**Prerequisites:** EET 1244 and EET 2544 and EET 2635.

**Description:** Extensive use of mathematics in analyzing discrete, linear device, linear systems and non-linear circuits. Development of the analytic skills necessary for upper-division work. The use of basic calculus in circuit analysis. Must obtain a "C" or better before admission to other 3000 level EET courses. Intended for transfer and returning students. Enrollment by adviser consent.

**Credit hours:** 5  
**Contact hours:** Lecture: 5 Contact: 5  
**Levels:** Undergraduate  
**Schedule types:** Lecture  
**Department/School:** Engineering Technology

### EET 3104 Elements of Electricity and Electronics
**Prerequisites:** MATH 1513.

**Description:** Essentials of electricity, controls, and electronics for non-majors. No credit for EET majors. Course previously offered as ECT 3104.

**Credit hours:** 4  
**Contact hours:** Lecture: 3 Lab: 3 Contact: 6  
**Levels:** Undergraduate  
**Schedule types:** Lab, Lecture, Combined lecture and lab  
**Department/School:** Engineering Technology

### EET 3113 Circuit Analysis II
**Prerequisites:** (EET 1244 with a grade of "C" or better OR EET 1214 with a grade of "B" or better) and (EET 2635 with a grade of "C" or better) AND (MATH 2133 with a grade of "C" or better OR MATH 2153 with a grade of "C" or better).

**Description:** Application of elementary switching functions and Laplace transforms to electronic circuit analysis. Circuit analysis in the S-plane, transfer functions and the application of circuit analysis software. Course previously offered as ECT 3113.

**Credit hours:** 3  
**Contact hours:** Lecture: 3 Contact: 3  
**Levels:** Undergraduate  
**Schedule types:** Lecture  
**Department/School:** Engineering Technology

### EET 3264 Microprocessors II
**Prerequisites:** EET 2635 and MATH 2133 and EET 3423.

**Description:** A continuation of EET 3254. Programming and interfacing of microcontrollers in embedded application, including interrupts, EEPROM, serial programming, interfacing, power management, algorithms, stepper motor control. Course previously offered as ECT 3264.

**Credit hours:** 4  
**Contact hours:** Lecture: 3 Lab: 3 Contact: 6  
**Levels:** Undergraduate  
**Schedule types:** Lab, Lecture, Combined lecture and lab  
**Department/School:** Engineering Technology

### EET 3303 Data Acquisition
**Prerequisites:** EET 2635 and EET 3363.

**Description:** The use of computers in data acquisition and signal processing. Course previously offered as ECT 3303.

**Credit hours:** 4  
**Contact hours:** Lecture: 2 Lab: 2 Contact: 4  
**Levels:** Undergraduate  
**Schedule types:** Lab, Lecture, Combined lecture and lab  
**Department/School:** Engineering Technology

### EET 3354 Communication and Signal Processing
**Prerequisites:** EET 2635 and MATH 2133 and EET 3423.

**Description:** Bandpass signaling principles and circuits. The Fourier transform; AM, SSB, FM, and PM signaling; binary modulated bandpass signaling (FSK and PSK); superheterodyne receiver; phase-locked loop (PLL); modulators and mixers; frequency multiplication; special purpose IC's. Course previously offered as ECT 3354.

**Credit hours:** 4  
**Contact hours:** Lecture: 3 Lab: 3 Contact: 6  
**Levels:** Undergraduate  
**Schedule types:** Lab, Lecture, Combined lecture and lab  
**Department/School:** Engineering Technology

### EET 3363 Project Design and Fabrication
**Prerequisites:** EET 1244 and EET 2544 and EET 2635 or Instructor Approval.

**Description:** Methods of designing, analyzing and fabricating electronic circuits using standard software packages. Heat transfer characteristics and problem solutions are included. Course previously offered as ECT 3124.

**Credit hours:** 4  
**Contact hours:** Lecture: 3 Lab: 3 Contact: 6  
**Levels:** Undergraduate  
**Schedule types:** Lab, Lecture, Combined lecture and lab  
**Department/School:** Engineering Technology

### EET 3364 Microprocessors I
**Prerequisites:** EET 2544 with a grade of "C" or better.

**Description:** An introduction to microcontrollers and their uses in embedded applications. Topics include system architecture, assembly language, structured programming, memory systems, user I/O, timers, peripherals, etc. Course previously offered as ECT 3364.

**Credit hours:** 4  
**Contact hours:** Lecture: 3 Lab: 3 Contact: 6  
**Levels:** Undergraduate  
**Schedule types:** Lab, Lecture, Combined lecture and lab  
**Department/School:** Engineering Technology

### EET 3383 Python Programming for Technology and Engineering
**Prerequisites:** MATH 2123 or MATH 2144 plus previous programming experience in any language.

**Description:** The Python programming language including syntax, collections, modules, object-oriented programming, functions, and graphical user interfaces with emphasis on applications in technology and engineering.

**Credit hours:** 3  
**Contact hours:** Lecture: 3 Contact: 3  
**Levels:** Undergraduate  
**Schedule types:** Lecture  
**Department/School:** Engineering Technology

### EET 3423 Project Design and Fabrication
**Prerequisites:** EET 1244 and MATH 2123 or equivalent which may be taken concurrently.

**Description:** Methods of designing, analyzing and fabricating electronic circuits using standard software packages. Heat transfer characteristics and problem solutions are included. Course previously offered as ECT 3423.

**Credit hours:** 4  
**Contact hours:** Lecture: 3 Lab: 3 Contact: 6  
**Levels:** Undergraduate  
**Schedule types:** Lab, Lecture, Combined lecture and lab  
**Department/School:** Engineering Technology

### EET 3544 Data Acquisition
**Prerequisites:** EET 2635 and EET 3363.

**Description:** The use of computers in data acquisition and signal processing. Course previously offered as ECT 3544.

**Credit hours:** 4  
**Contact hours:** Lecture: 2 Lab: 2 Contact: 4  
**Levels:** Undergraduate  
**Schedule types:** Lab, Lecture, Combined lecture and lab  
**Department/School:** Engineering Technology
EET 3423 Applied Analysis for Technology
Prerequisites: MATH 2133 or equivalent.
Description: Applications of elements of matrix algebra, ordinary differential equations, Fourier series, and infinite series to problems in engineering technology. Previously offered as GENT 3123.
Credit hours: 3
Contact hours: Lecture: 3 Contact: 3
Levels: Undergraduate
Schedule types: Lecture
Department/School: Engineering Technology

EET 3524 Advanced Logic Circuits
Prerequisites: EET 2544.
Description: Computer-based design, simulation and implementation of digital/mixed-signal systems using programmable logic, field programmable gate arrays, ASICs and system-on-chip technology.
Credit hours: 4
Contact hours: Lecture: 3 Lab: 3 Contact: 6
Levels: Undergraduate
Schedule types: Lab, Lecture, Combined lecture and lab
Department/School: Engineering Technology

EET 3533 Introduction to Telecommunications
Prerequisites: EET 2544, EET 2635, EET 3254.
Description: Introductory course to the field of telecommunications. Study of the various technologies and how the application of these technologies work together to form functioning systems and networks.
Credit hours: 3
Contact hours: Lecture: 2 Lab: 3 Contact: 5
Levels: Undergraduate
Schedule types: Lab, Lecture, Combined lecture and lab
Department/School: Engineering Technology

EET 3713 Introduction to Electric Power Technology I
Prerequisites: EET 1244 or EET 3104 and PHYS 1214 or equivalent and MATH 2133 or equivalent.
Description: Physical principles of electromagnetic and electromechanical energy conversion devices and their application to conventional transformers and rotating machines.
Credit hours: 3
Contact hours: Lecture: 3 Contact: 3
Levels: Undergraduate
Schedule types: Lecture
Department/School: Engineering Technology

EET 3723 Introduction to Electric Power Technology II
Prerequisites: EET 3713.
Description: Physical principles of electromagnetic and electromechanical energy conversion devices and their application to conventional transformers and rotating machines.
Credit hours: 3
Contact hours: Lecture: 3 Contact: 3
Levels: Undergraduate
Schedule types: Lecture
Department/School: Engineering Technology

EET 3803 Fundamentals of Mechatronics
Prerequisites: Grade of "C" or better in EET 2635.
Description: Fundamentals of mechatronic systems and components. Different modelling approaches used for mechatronics systems, sensors and actuators, data acquisition and interfacing, signal conditioning, and PLC's. Previously offered as GENT 3503. Same course as MET 3803.
Credit hours: 3
Contact hours: Lecture: 2 Lab: 2 Contact: 4
Levels: Undergraduate
Schedule types: Lab, Lecture, Combined lecture and lab
Department/School: Engineering Technology

EET 4050 Advanced Electronic Problems
Prerequisites: Junior standing and consent of head of department.
Description: Junior standing and consent of head of department. Special problems in the electronic area. Course previously offered as ECT 4050. Offered for variable credit, 1-4 credit hours, maximum of 4 credit hours.
Credit hours: 1-4
Contact hours: Contact: 1-4 Other: 1-4
Levels: Undergraduate
Schedule types: Independent Study
Department/School: Engineering Technology

EET 4314 Elements of Control
Prerequisites: EET 3113 and EET 3363 and EET 3423.
Description: Principles of analog and digital control, with emphasis on the analysis of feedback control systems in their various conceptual configurations. Application of feedback control theory to the analysis and design of present day circuits and systems. Use of circuit analysis software. Course previously offered as ECT 4314.
Credit hours: 4
Contact hours: Lecture: 3 Lab: 3 Contact: 6
Levels: Undergraduate
Schedule types: Lab, Lecture, Combined lecture and lab
Department/School: Engineering Technology

EET 4363 Digital Signal Processing
Prerequisites: EET 3354, EET 3363.
Credit hours: 3
Contact hours: Lecture: 3 Contact: 3
Levels: Undergraduate
Schedule types: Lecture
Department/School: Engineering Technology

EET 4514 Advanced Telecommunication Topics
Prerequisites: EET 3533.
Description: Study of data transmission techniques between digital electronic devices.
Credit hours: 4
Contact hours: Lecture: 3 Lab: 2 Contact: 5
Levels: Undergraduate
Schedule types: Lab, Lecture, Combined lecture and lab
Department/School: Engineering Technology
EET 4523 Introduction to Telecommunications
Prerequisites: EET 4514.
Description: Study of the effective management of telecom systems. Topics such as traffic engineering, quality of service and associated design costs are examined.
Credit hours: 3
Contact hours: Lecture: 2 Lab: 2 Contact: 4
Levels: Undergraduate
Schedule types: Lab, Lecture, Combined lecture and lab
Department/School: Engineering Technology

EET 4654 Microwave Techniques
Prerequisites: EET 2635, EET 3354.
Description: Study of topics pertaining to VHF behavior of circuits and systems. Transmission line theory wave equations, SWR, impedance calculations and transformations, and loss line. Extensive use of the Smith chart to solve transmission line problems. Introduction to Maxwell’s equations, with emphasis on steady state. Wave propagation in rectangular waveguides. Introduction to antennas. Modeling of transistors at VHF, UHF, and microwave frequencies. Design and analysis of transistor amplifiers at VHF using y and s parameters. Designing LC impedance matching networks. Previously offered as ECT 4654.
Credit hours: 4
Contact hours: Lecture: 3 Lab: 3 Contact: 6
Levels: Undergraduate
Schedule types: Lab, Lecture, Combined lecture and lab
Department/School: Engineering Technology

EET 4803 Mechatronics System Design
Prerequisites: Grade of "C" or better in GENT 3123 and EET 3803 (can be concurrent enrollment in GENT 3123).
Description: Modelling of mechanical, electrical, and hydraulic components. Feedback control systems, electro-hydraulic drives, electrical drives, and microcontroller programming. Previously offered as GENT 4503. Same course as MET 4803.
Credit hours: 3
Contact hours: Lecture: 2 Lab: 2 Contact: 4
Levels: Undergraduate
Schedule types: Lab, Lecture, Combined lecture and lab
Department/School: Engineering Technology

EET 4833 Industrial Project Design I
Prerequisites: 20 credit hours of upper-division EET courses or consent of instructor.
Description: Course mirrors the design process in industry. Topics covered are design team formation, identify objectives, define design specifications, write specifications, create a state of work and Gantt chart, create a project budget, perform a preliminary design review, design prototype. Previously offered as EET 4832 and ECT 4832.
Credit hours: 3
Contact hours: Lecture: 1 Lab: 5 Contact: 6
Levels: Undergraduate
Schedule types: Lab, Lecture, Combined lecture and lab
Department/School: Engineering Technology

EET 4843 Industrial Project Design II
Prerequisites: EET 4833.
Description: Student continues in the project steps of Change Board Review, Critical Design Review, developing & writing test specs., product fabrication and testing, formal technical report submission and outcomes assessment exam.
Credit hours: 3
Contact hours: Lecture: 1 Lab: 5 Contact: 6
Levels: Undergraduate
Schedule types: Lab, Lecture, Combined lecture and lab
Department/School: Engineering Technology