

# ENGINEERING TECHNOLOGY (E T)

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## ET 101 Introduction to Engineering Technology and Geomatics 1 Credit (1)

An introduction to geomatics and the various engineering technology disciplines, the engineering approach to problem solving, and the design process. Projects emphasize the importance of teamwork, written & oral communication skills, as well as ethical responsibilities.

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## ET 104 Soldering Techniques 1 Credit (1)

Fundamentals of soldering, desoldering, and quality inspection of printed circuit boards. (3P)

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## ET 109 Computer Drafting Fundamentals 3 Credits (3)

Introduction to principles and fundamentals of drafting using both manual drawing techniques and computer-aided drafting (CAD) applications. (3+2P)

**Repeatable:** up to 3 credits

**Crosslist:** DRFT 109 and C E 109

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## ET 110 Introduction to 3-D Modeling (Solid Works) 3 Credits (3)

Introduction to SolidWorks, a 3-D modeling software. The foundation for designing mechanical parts and assemblies. (2+3P)

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## ET 120 Computation Software 2-3 Credits

The use of spreadsheet software in the field of engineering technology.

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## ET 125 Introduction to Renewable Energy 3 Credits (3)

Renewable energy systems, including topics in thermal-solar photovoltaic, wind, geothermal systems, and other current topics.

Theory, practical applications, safety considerations and the economics of alternative renewable energy systems compared to conventional systems.

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## ET 143 Civil/Survey Drafting I 3 Credits (3)

Introduction to drafting in the field of Civil Engineering. Drawings, projects, and terminologies related to topographic mapping, contour drawings, plan, and profiles as street/highway layout. (2+2P)

**Prerequisite(s):** A grade of C- or better in E T 109 or DRFT 109

**Repeatable:** up to 3 credits

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## ET 153 Fundamentals of Networking Communications 3 Credits (3)

Introduction to networking basics, including computer hardware and software, electricity, networking terminology, protocols, LANs, WANs, OSI model, IP addressing, and design and documentation of basic network and structure cabling.

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## ET 154 Construction Methods and Communications 3 Credits (3)

Blueprint reading, specifications, and introduction to materials used in construction.

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## ET 155 Network Operating Systems I 3 Credits (3)

Introduction to a computer network operating system. (3+1P).

**Prerequisite(s):** E T 120 or E T 122

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## ET 156 Introduction to Information Security 2 Credits (2)

This course introduces information security terminology, historical evolution of digital security, types of PC and network system vulnerabilities and types of information loss. In addition, methods of information protection and integrity, intrusion detection, and recovery of data are introduced.

**Prerequisite(s)/Corequisite(s):** E T 120

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## ET 160 Windows Fundamentals for IET 3 Credits (3)

Fundamental review of the Windows operating system including installation and upgrades as well as managing applications, files, folders, devices and maintenance.

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## ET 182 Digital Logic 2 Credits (2)

The use of truth tables, Boolean equations, and diagrams to define, simplify, and implement logic-valued functions. (1+2P).

**Prerequisite(s):** A grade of C- or better in MATH 1220G or higher

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## ET 183 Applied DC Circuits 3 Credits (3)

Application of Ohm's law, Kirchhoff's laws, Thevenin's, and Norton's theorems to the analysis of DC passive circuits. Embedded Lab. (2+2P).

**Prerequisite(s)/Corequisite(s):** MATH 1220G

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## ET 183L Applied DC Circuits Lab 1 Credit (1)

DC applied circuits lab. (2P).

**Corequisite(s):** E T 183

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## ET 184 Applied AC Circuits 1-4 Credits

Application of circuit laws and theorems to analysis of AC passive circuits. Resonant circuit, polyphase circuit and magnetic circuit topics are introduced. Embedded Lab. (2+2P).

**Prerequisite(s):** A grade of C- or better in ENGR 120

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## ET 190 Applied Circuits 4 Credits (4)

Application of Ohm's law, Kirchhoff's laws, and Thevenin's theorems to the analysis of AC and DC passive circuits. Electronic circuit topics are introduced. Embedded lab. (3+2P)

**Prerequisite(s)/Corequisite(s):** A grade of C- or better in MATH 1250G or higher

**Repeatable:** up to 4 credits

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## ET 191 Applied Circuits Laboratory 1 Credit (1)

Applied Circuits Lab. (2P)

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## ET 200 Special Topics 1-6 Credits

Directed study or project.

**Repeatable:** for a maximum of 6 credits

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## ET 210 Intermediate 3-D Modeling (Solid Works) 3 Credits (3)

Intermediate 3-D modeling. Applied modeling of techniques to prepare for SolidWorks certification (CSWA).

**Prerequisite(s):** A grade of C- or better in ENGR 110

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**E T 217 Manufacturing Processes 3 Credits (3)**

Introduction to manufacturing and processing, including: casting, forming, and machining. Emphasis on creating products with the appropriate techniques.

**Prerequisite(s):** E T 110 and MATH 1220G

**Crosslist:** I E 217

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**E T 217L Manufacturing Processes Lab 1 Credit (1)**

Hands-on laboratory in machine shop to apply topics from E T 217, including: casting, forming, and machining. (3P)

**Corequisite(s):** E T 217

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**E T 220 Internship 1-6 Credits**

Internship requiring an approved number of hours of varied and progressive experience in the field of study. The scope and other requirements of the internship are stated in an individualized syllabus and through a memorandum of understanding between the faculty mentor and the industry partner.

**Prerequisite(s):** E T 283

**Repeatable:** up to 6 credits

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**E T 240 Applied Statics 3 Credits (3)**

Fundamental topics of applied statics, including force system analysis, equilibrium, free body diagrams, methods of joints and sections, distributed loads, friction, centroids, area moments, and shear and moment diagrams.

**Prerequisite(s):** PHYS 1230G or PHYS 1310G

**Prerequisite(s)/Corequisite(s):** MATH 1430G or MATH 1511G

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**E T 241 Applied Dynamics 3 Credits (3)**

The foundation for understanding particles and bodies in motion and the forces involved, including: projectile motion, Newton's Laws of Motion, conservation of energy, and impulse and momentum.

**Prerequisite(s):** A grade of C- or better in either E T 240 or ENGR 233

**Prerequisite(s)/Corequisite(s):** (MATH 1440 or MATH 1521G or MATH 1521H)

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**E T 246 Electronic Devices I 4 Credits (4)**

Solid-state devices including diodes, bipolar-transistors, and field effect transistors. Use of these devices in rectifier circuits, small signal and power amplifiers. (3+3P)

**Prerequisite(s):** A grade of C- or better in one of the following: E T 190 or E T 184 or ENGR 120

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**E T 253 Networking Operating Systems II 3 Credits (3)**

Introduction to a computer network operating system. (3+3P)

**Prerequisite(s):** E T 120 and E T 153

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**E T 254 Concrete Technology 3 Credits (3)**

Fundamentals of aggregates, Portland cement, and asphalt used in design and construction. (2+2P)

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**E T 255 Linux System Administration 3 Credits (3)**

Operating systems applications and interfacing with an introduction to systems administration. Topics include Shell Programming, Programming Tools, Database Management, System Backups, Security, Setup and Maintenance of Linux Servers.

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**E T 256 Networking Operating Systems III 3 Credits (3)**

Introduction to a computer network operating system. (3+1P)

**Prerequisite(s):** E T 253

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**E T 262 Software Technology I 3 Credits (3)**

An introduction to computer programming concepts as applied to engineering technology. Includes basic logic design, algorithm development, debugging and documentation. History and use of computers and their impact on society. (2+2P)

**Prerequisite(s)/Corequisite(s):** (E T 182 or ENGR 130) or (MATH 1250G or MATH 1430G)

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**E T 272 Electronic Devices II 4 Credits (4)**

Operational amplifiers, positive and negative feedback, computer aided circuit analysis. In addition circuits include integrator, differentiators and phase shift networks. (3+3P).

**Prerequisite(s):** A grade of C- or better in E T 246

**Prerequisite(s)/Corequisite(s):** MATH 1435 or MATH 1511G

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**E T 273 Advanced Networking Communications 4 Credits (4)**

Explores advanced networking communications to include Wireless Networking, Virtualization and Cloud Computing, Subnets and VLANs, Network Risk Management, Network Security Design, Network Performance, and WANS. The course covers the examination objectives and detailed preparation for students to take the CompTIA Network+ exam. (2+4P)

**Prerequisite(s):** E T 153

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**E T 276 Electronic Communications 3 Credits (3)**

Antennas, transmission devices, A-M and F-M transmission and detection, pulse systems, microwave systems. (2+2P)

**Prerequisite(s):** E T 246

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**E T 280 Web Design and Multimedia 3 Credits (3)**

Introduction to front-end web development including webpage design, structure, layout, positioning, responsiveness, and foundational layers of how the web works. Video, audio, and other digital presentation tools are covered.

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**E T 282 Digital Electronics 4 Credits (4)**

Applications of digital integrated circuits, multiplexers, counters, arithmetic circuits, and microprocessors. (3+3P).

**Prerequisite(s):** E T 182

**Prerequisite(s)/Corequisite(s):** (E T 190 or E T 184)

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**E T 283 Hardware PC Maintenance 3 Credits (3)**

Installing, configuring, troubleshooting, and maintaining personal computer hardware components. (3+1P)

**Prerequisite(s):** E T 120

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**E T 284 Software PC Maintenance 3 Credits (3)**

Installing, configuring, troubleshooting, and maintaining personal computer operating systems. (3+1P)

**Prerequisite(s):** E T 120

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**E T 285 Advanced Information Security 3 Credits (3)**

The course covers detailed analysis of network security, including security operations and policy adherence; internal and external vulnerabilities; methods of identifying, controlling and managing system access, and the protection of system information.

**Prerequisite(s):** E T 156

**Prerequisite(s)/Corequisite(s):** E T 283

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**E T 286 Information Security Certification Preparation 4 Credits (4)**

The course covers the examination objectives and detailed preparation for a certification in information security.

**Prerequisite(s):** E T 285

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**E T 290 Networking Wireless Communication 3 Credits (3)**

This course provides an introduction to wireless networking and communications. Some of the topics covered are protocols, transmission methods, and IEEE 802.11 standards. Wireless LAN (WLAN) fundamentals, devices, and security, cellular telephony, broadband, and satellite communications. (3+1P)

**Prerequisite(s):** E T 273

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**E T 291 PC Forensics and Investigation 3 Credits (3)**

Introduction to computer forensics and investigative fundamentals. Topics include understanding computer forensic and investigation law and requirements, processing crime and incident scenes, and the extraction, preservation, analysis and presentation of computer-related evidence.

**Prerequisite(s):** E T 120 or E T 122

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