E T-ENGINEERING TECHNOLOGY

E T 104. Soldering Techniques
1 Credit (3P)
Fundamentals of soldering, desoldering, and quality inspection of printed circuit boards.

E T 106. Drafting Concepts/Computer Drafting Fundamentals I
4 Credits (2+4P)
Basic drafting skills, terminology, and visualization. Introduction to principles and fundamentals of computer-aided drafting. Community Colleges only. Same as DRFT 112.
Prerequisite: OECS 125, OECS 207, or consent of instructor.

E T 109. Computer Drafting Fundamentals
3 Credits (3+2P)
Crosslisted with: DRFT 109, C E 109 and SUR 109

E T 110. Introduction to 3-D Modeling (Solid Works)
3 Credits (2+3P)
Introduction to SolidWorks, a 3-D modeling software. The foundation for designing mechanical parts and assemblies.

E T 120. Computation Software
2-3 Credits (2-3)
The use of spreadsheet software in the field of engineering technology.

E T 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.

E T 153. Introduction to Computer Networks
3 Credits (3)
Introduction to basic computer network fundamentals including International Open Systems Interconnect (OSI), the seven-layer model, and various networking hardware devices. Community Colleges only.

E T 154. Construction Methods and Communications
3 Credits (3)
Blueprint reading, specifications, and introduction to materials used in construction.

E T 155. Network Operating Systems I
3 Credits (3+1P)
Introduction to a computer network operating system. May not be used as part of an E T degree program on main campus. Restricted to: Community Colleges only.
Prerequisite(s): E T 120 or E T 122.

E T 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. Restricted to Community Colleges campuses only.

E T 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.

E T 182. Digital Logic
3 Credits (3)
The use of truth tables, Boolean equations, and diagrams to define, simplify, and implement logic-valued functions.

E T 183. Applied DC Circuits
3 Credits (2+2P)
Application of Ohm's law, Kirchhoff's laws, Thevenin's, and Norton's theorems to the analysis of DC passive circuits. Embedded Lab.
Prerequisite(s)/Corequisite(s): MATH 1220G.

E T 183 L. Applied DC Circuits Lab
1 Credit (2P)
DC applied circuits lab.
Corequisite(s): E T 183.

E T 184. Applied AC Circuits
3 Credits (2+2P)
Application of circuit laws and theorems to analysis of AC passive circuits. Resonant circuit, polyphase circuit and magnetic circuit topics are introduced. Embedded Lab.
Prerequisite(s)/Corequisite(s): MATH 1250G. Prerequisite(s): E T 183.

E T 184 L. Applied AC Circuits Lab
1 Credit (2P)
AC applied circuits lab
Corequisite(s): E T 184.

E T 190. Applied Circuits
4 Credits (3+2P)
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.
Prerequisite(s)/Corequisite(s): MATH 1250G.

E T 191. Applied Circuits Laboratory
1 Credit (2P)
Applied Circuits Lab

E T 200. Special Topics
1-3 Credits
Directed study or project. May be repeated for a maximum of 6 credits.
Prerequisite: consent of department head.

E T 203. Computational Foundations
3 Credits (3)
Fundamental concepts of various proof techniques. These concepts will be applied to the use of computer algorithms, programming languages and other engineering and technology applications.
Prerequisite(s): MATH 1250G and E T 262.

E T 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): E T 110.
ET 217. Manufacturing Processes
3 Credits (3)
Introduction to manufacturing and processing, including: casting, forming, and machining. Emphasis on creating products with the appropriate techniques. Crosslisted with: IE 217.
Prerequisite(s)/Corequisite(s): ET 217L. Prerequisite(s): ET 110 and MATH 1220G.

ET 217 L. Manufacturing Processes Lab
1 Credit (3P)
Hands-on laboratory in machine shop to apply topics from ET 217, including: casting, forming, and machining.
Prerequisite(s)/Corequisite(s): ET 217.

ET 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. May be repeated up to 6 credits. Consent of Instructor required.
Prerequisite(s): ET 283.

ET 230. Introduction to Servo Systems
1 Credit (2P)
Introduction to Servo Systems. Topics include uses of servos in the industry, servo types, loop gains and frequency response, software control systems, damping, feedback, encoders, synchros and resolvers.
Restricted to Community Colleges campuses only.
Prerequisite(s): ET 246.

ET 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)/Corequisite(s): MATH 1430G or MATH 1511G. Prerequisite(s): PHYS 1230G or PHYS 1310G.

ET 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)/Corequisite(s): (MATH 1140 or MATH 1521G or MATH 1521H). Prerequisite(s): ET 240.

ET 245. Computer Hardware Fundamentals
3 Credits (2+2P)
Computer hardware fundamentals including architecture, interfacing, peripherals, troubleshooting, system upgrades, and maintenance. Restricted to Las Cruces campus only.

ET 246. Electronic Devices I
4 Credits (3+3P)
Solid-state devices including diodes, bipolar-transistors, and field effect transistors. Use of these devices in rectifier circuits, small signal and power amplifiers.
Prerequisite(s): ET 190 or ET 184.

ET 253. Networking Operating Systems II
3 Credits (3+1P)
Introduction to a computer network operating system. May not be used as part of an ET degree program on main campus. Restricted to Community Colleges campuses only.
Prerequisite(s): ET 155.

ET 254. Concrete Technology
3 Credits (3)
Fundamentals of aggregates, Portland cement, and asphalt used in design and construction.

ET 255. Linux System Administration
3 Credits (3)
A system administration view of the Linux operating system covering various distributions with a focus on managing the operating system and enterprise applications that run on Linux.

ET 256. Networking Operating Systems III
3 Credits (3+1P)
Introduction to a computer network operating system. May not be used as part of an ET degree program on main campus. Restricted to Community Colleges campuses only.
Prerequisite(s): ET 253.

ET 262. Software Technology I
3 Credits (2+2P)
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.
Prerequisite(s)/Corequisite(s): ET 283.

ET 272. Electronic Devices II
4 Credits (3+3P)
Operational amplifiers, positive and negative feedback, computer aided circuit analysis. In addition circuits include integrator, differentiators and phase shift networks.
Prerequisite(s)/Corequisite(s): MATH 1430G or MATH 1511G. Prerequisite(s): ET 246.

ET 273. Fundamentals of Networking Communications I
4 Credits (2+4P)
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. Community Colleges only. May be repeated up to 4 credits. Restricted to Community Colleges campuses only.
Prerequisite(s): ET 153.

ET 276. Electronic Communications
3 Credits (2+2P)
Antennas, transmission devices, A-M and F-M transmission and detection, pulse systems, microwave systems.
Prerequisite(s): ET 246.

ET 277. Computer Networking I for IET
3 Credits (2+2P)
Computer network design and applications for LAN, TCP/IP networks, routing and switching technologies, VLANs, and the OSI layers from physical to transport.
Prerequisite(s): ET 182.
E T 280. Multimedia Tools and Support
3 Credits (3)
Introduction to video, audio and other digital presentation methods. Addresses the latest multimedia technology advances and how they apply to the information and communication technology fields. Sample tools like ffmpeg, and Audacity are covered.

E T 282. Digital Electronics
4 Credits (3+3P)
Applications of digital integrated circuits, multiplexers, counters, arithmetic circuits, and microprocessors.
Prerequisite(s)/Corequisite(s): (E T 190 or E T 184). Prerequisite(s): E T 182.

E T 283. Hardware PC Maintenance
3 Credits (3+1P)
Installing, configuring, troubleshooting, and maintaining personal computer hardware components.
Prerequisite(s): E T 120 or E T 122.

E T 284. Software PC Maintenance
3 Credits (3+1P)
Installing, configuring, troubleshooting, and maintaining personal computer operating systems.
Prerequisite(s): E T 120 or E T 122.

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)/Corequisite(s): E T 283. Prerequisite(s): E T 156.

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.

E T 290. Networking Wireless Communication
3 Credits (3+1P)
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.
Prerequisite: E T 273.

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.

E T 300. Special Topics
1-3 Credits
Directed study or project. May be repeated for a maximum of 6 credits.
Prerequisite: consent of department head.

E T 305. Introduction to Product Design
3 Credits (2+3P)
The process of designing an innovative product for a real customer. Working through ideas, prototypes, 3-D models, concept validation, and entrepreneurship.
Prerequisite(s)/Corequisite(s): E T 210, E T 217, and (COMM 1115G or COMM 1130G or AXED 2120G or HNRS 2175G) or consent of instructor for non-MET majors.

E T 306. Fundamental and Applied Thermodynamics
3 Credits (3)
First and second laws, properties of substances, thermodynamic cycles including power generation and refrigeration.
Prerequisite(s)/Corequisite(s): E T 262. Prerequisite(s): CHEM 1120G and E T 240 and (MATH 1430G or MATH 1511G) and (PHYS 1240G or PHYS 1320G) and (PHYS 1240L or PHYS 1320L).

E T 306 L. Thermodynamics Lab
1 Credit (1)
Applications of thermodynamic theory to lab devices. Practice in testing, instrumentation, and data collection.
Prerequisite(s)/Corequisite(s): E T 306 and (E T 184 or E T 190).

E T 308. Fluid Technology
3 Credits (3)
Application of basic principles of fluid mechanics to practical applied problems.
Prerequisite(s): (MATH 1430G or MATH 1511G) and E T 240.

E T 308 L. Fluid Technology Lab
1 Credit (3P)
Measurements in fluid statics, dynamics, and hydraulic systems.
Prerequisite(s)/Corequisite(s): E T 308. Prerequisite(s): (MATH 1430G or MATH 1511G) and E T 240.

E T 309V. Manufacturing: History and Technology
3 Credits (3)
The history of manufacturing, the technology on which it is based, and its impact on society.

E T 310. Applied Strength of Materials
3 Credits (3)
Application of principles of strength of materials to practical design and analysis problems.
Prerequisite(s)/Corequisite(s): MATH 1440 or MATH 1521G or MATH 1521H. Prerequisite(s): (MATH 1430G or MATH 1511G) and E T 240.

E T 310 L. Applied Strength of Materials Lab
1 Credit (3P)
Testing and analyzing the physical properties of materials. Cursory review of Excel, PowerPoint, FEA, Instron machine, and testing standards.
Prerequisite(s)/Corequisite(s): E T 310.

E T 314. Communications Systems I
3 Credits (3+2P)
Circuits and devices used for transmission, reception, and processing of RF signals.
Prerequisite(s): E T 246 & MATH 1250G.
E T 317. Advanced Manufacturing and Design  
3 Credits (3)  
Advanced 3-D modeling with current engineering design practices. Students will use SolidWorks add-ins such as CAMWorks, Product Data Management (PDM), and Model-Based Definition in conjunction with Geometric Dimensioning and Tolerancing (GD&T) practices. Students will have the opportunity to take the Certification SolidWorks Professional Exam (CSWP).  
Prerequisite(s): E T 210 and E T 217.

E T 324. Signal Processing and Filtering  
4 Credits (3+3P)  
Application of digital and analog signal conversion models. Discrete time signals and systems. Time and frequency domain concepts. Presentation of Fourier and Z transforms. Application of analog and digital signal filtering with and without feedback.  
Prerequisite(s)/Corequisite(s): (MATH 1440 or MATH 1511G) and ((PHYS 1240G or PHYS 1320G) and (PHYS 2140L or PHYS 1320L)).  
Prerequisite(s): E T 272.

E T 328. Kinematics of Machines  
3 Credits (2+3P)  
Prerequisite(s)/Corequisite(s): E T 305. Prerequisite(s): E T 210 and E T 241.

E T 332. Applied Design of Structures I  
4 Credits (3+3P)  
An introduction to structural analysis and design. Use of various building codes for development of allowable and factored loads on structures. Allowable stress and strength design concepts for structural components using concrete and steel. Required use of computer software such as spreadsheets, databases, and self-developed programs and design aids.  
Prerequisite(s): E T 310 and (MATH 1440 or MATH 1521G or MATH 1521H).

E T 339. Introduction to Digital Forensics and Incident Response  
3 Credits (2+3P)  
Introduction to the skills required to perform digital forensics and incident response on Windows operating systems. Topics include: live response, evidence acquisition, Windows operating system artifacts, documentation and reporting.  
Prerequisite(s): E T 255 and E T 160.

E T 344. Microcomputer Systems  
3 Credits (2+3P)  
Microcomputer and/or microcontroller systems applications and architectures with a software emphasis using programming languages.  
Prerequisite(s)/Corequisite(s): E T 362. Prerequisite(s): E T 182 and MATH 1250G.

E T 354. Soil and Foundation Technology  
4 Credits (3+3P)  
Fundamentals of investigation of soil properties and their importance in design, construction, and testing as related to buildings, roads, dams, and other structures. Design of foundations considering slope stability, bearing capacity and settlement.  
Prerequisite(s)/Corequisite(s): E T 310. Prerequisite(s): E T 254.  
Restricted to: ET U, ET E, ET M, C E, ET C majors.

E T 355. Site/Land Development and Layout  
3 Credits (3)  
Techniques, methods, and takeoffs for infrastructure layout, site plan design, grading, earthwork, utilities, road construction.  
Prerequisite(s)/Corequisite(s): DRFT 143 or DRFT 153.

E T 360V. Technology in Business and Society  
3 Credits (2+2P)  
Examination of how technology affects business and society with specific attention to understanding the role of technical personnel and their interaction with nontechnical personnel.  
Prerequisite(s): E T 262 and MATH 1250G.

E T 367. Computer Networking I  
3 Credits (2+2P)  
Computer network design and applications for LAN, TCP/IP networks, routing and switching technologies, VLANs, and the OSI layers from physical to transport.  
Prerequisite(s): E T 182 and MATH 1250G.

E T 381. Renewable Energy Technologies  
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.  
Prerequisite(s): MATH 1220G.

E T 382. Solar Energy Technologies  
3 Credits (2+3P)  
Solar energy technologies, including topics in passive, solar thermal, and photovoltaic systems. Theory, practical applications, safety considerations and the economics of solar renewable energy systems compared to conventional systems.  
Prerequisite(s): MATH 1220G.

E T 384. Wind and Water Energy Technologies  
3 Credits (3)  
Wind and Water energy technologies, including topics in small and large scale systems. Theory, practical applications, safety considerations and the economics of wind and water renewable energy systems compared to conventional systems.  
Prerequisite(s): MATH 1220G.

E T 386. Sustainable Construction and Green Building Design  
3 Credits (3)  
Sustainable Building materials, methods, and techniques including green architecture and design, codes, standards and specifications.  
Prerequisite(s): MATH 1220G.

E T 396. Heat Transfer and Applications  
3 Credits (2+3P)  
Fundamentals of conduction, convection, and radiation heat transfer. Application of heat transfer, thermodynamics, and fluid mechanics principles to thermal system analysis and design.  
Prerequisite(s): E T 306 and E T 308 and PHYS 1240G.
E T 398. Digital Systems
3 Credits (2+3P)
Advanced analysis and design of digital systems using state machine logic, programming of logic devices, implementation and testing. Pre/Prerequisite(s): E T 282 and MATH 1250G.
Corequisite(s): E T 362.

E T 400. Special Topics
1-3 Credits
Directed study or project. May be repeated for a maximum of 6 credits. Prerequisite: consent of department head.

E T 401. Heating and Air-Conditioning Systems
3 Credits (3)
HVAC system design including heating and cooling load calculations, psychometrics, piping, duct layout, and system control. Same as M E 401. Prerequisite: E T 306.
Corequisite: E T 396.

E T 402. Instrumentation
3 Credits (2+3P)
Sensors/transducers, signal conditioning and transmission for measurement and control systems. Student project in an area of instrumentation and/or control is required. Prerequisite(s)/Corequisite(s): E T 396 or E T 398.

E T 410. Senior Seminar
1 Credit (1)
Transition from academics to business and industry. Graded S/U. Prerequisite: senior standing in E T.

E T 412. Highway Technology
3 Credits (3)
Road-vehicle performance, geometric alignment, traffic analysis, highway materials, pavement design, and plan and profile development. Prerequisite(s): E T 354.

E T 415. Manufacturing Management and Productivity
3 Credits (3)
Projects incorporating concurrent engineering, total quality management, design for manufacturability/assembly, and other contemporary topics in manufacturing. Prerequisites: senior standing in E T.

E T 418. Applied Hydraulics
3 Credits (3)
Introduction to hydrology, hydraulic equations, hydraulic cross-sections, control structures, and collection and distribution of water, wastewater, and storm runoff using closed conduit and open channel flow. Prerequisite(s): E T 388.

E T 420. Senior 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. Taken in the senior year of program. Prerequisites: Senior standing in E T.

E T 421. Senior Project
3 Credits (3)
Project in an area of civil engineering technology conducted under the direction of civil engineering technology faculty member. Project must be one that can be completed within a semester and of sufficient complexity for 3 credits. Taken last semester of program.

E T 426. Analysis and Design of Machine Elements
3 Credits (2+3P)
Analysis and design of power transmission components, including: gears, sprockets, belts, chains, bearings, and shafts. Experiential design project using SolidWorks and Excel modeling. Prerequisite(s)/Corequisite(s): E T 305. Prerequisite(s): E T 210, E T 241, and E T 310.

E T 432. Applied Design of Structures II
4 Credits (3+3P)
Continuation of E T 332. Design of structural systems and study of their responses. Wood and masonry systems included. Prerequisite(s): E T 332.

E T 435. Senior Project
3 Credits (2+3P)
Capstone course. Practical application of student’s cumulative knowledge to an assigned design projects. Design principles, teamwork, and project management skills are stressed. Demonstration of written and oral communication skills via project documentation and presentation of results. Must be graduating senior. Consent of Instructor required.

E T 439. Advanced Digital Forensics and Incident Response
3 Credits (3)
Advanced topics in digital forensics and incident response on Windows, Linux and Mac OS X and mobile devices. Topics include: Memory analysis, registry analysis, timeline analysis, malware analysis, Linux artifacts, network analysis and advanced cyber security concepts. Prerequisite(s): E T 339 and E T 377.

E T 444. Hardware and Software Senior Design
3 Credits (2+3P)
The design, development, implementation, documentation and formal demonstration of a microprocessor-based application to solve an engineering problem. Emphasis on microprocessor architectural concepts and software interfacing. A student project is required. Prerequisite(s): E T 344 and E T 398.

E T 454. Advanced Construction Technology
3 Credits (3)
Contractor design and construction methods concerning formwork, special foundations, shoring, excavations, pilings, steel erection, and various material handling components. Prerequisite: E T 354 and E T 355.

E T 455. Cost Estimating and Scheduling
3 Credits (3)
Methods and techniques in construction estimating including final bid preparation, construction planning and scheduling using various network methods and other techniques. Prerequisite: junior or senior standing in E T.

E T 456. Applied Power Technologies
4 Credits (3+3P)
Basic elements of modern power systems, energy sources, substation configuration, load cycles, and three-phase circuits. Students will gain experience in power factor correction, transmission line configurations and impedance, voltage regulation of transformers, and the per-unit system. Study of load flow, fault analysis, and economic operations is included. Prerequisite(s): (MATH 1430G or MATH 1511G) and E T 272 and (PHYS 1240G or PHYS 1320G) and (PHYS 1240L or PHYS 1320L)).
E T 458. Web Development and Database Applications  
3 Credits (3)  
Design, planning, and building of interactive and dynamic web applications which are customizable and contain real-time information. Topics include relational databases, object oriented programming, secure-coding practices and web security, user authentication and personalization, as well as front-end and back-end technology integration.  
Prerequisite(s): E T 362 and E T 160.

E T 460. Web Technologies and Multimedia  
3 Credits (3)  
Introduction to web technologies and multimedia.  
Prerequisite(s): E T 160.

E T 463. Advanced Linux and Python Scripting  
3 Credits (3)  
Advanced Linux includes installation and maintenance of Unix/Linux/Windows versions of Python. Use of Python to solve numerous engineering problems using Python scripting as infrastructure.  
Prerequisite(s): E T 255 and E T 362.

E T 464. Windows Enterprise Administration  
3 Credits (3)  
Installation, configuration, and maintenance of Windows Enterprise services which includes Active Directory, distributed file systems, SQL Server, Web Server, Authentication Procedures, and enterprise elasticity. Topics covered include: Server Maintenance and Troubleshooting Methodologies.  
Prerequisite(s)/Corequisite(s): E T 339. Prerequisite(s): E T 362.

E T 472. Intelligent Transportation Systems (ITS)  
3 Credits (3)  
Traffic flow theory, telecommunication and information technology application in transportation, system architecture and standards, transportation management, incident and emergency management, corridor management, dynamic route guidance, in-vehicle systems, and traffic signal timing. Consent of instructor required.

E T 477. Computer Networking II  
3 Credits (2+2P)  
Advanced concepts in computer network design and applications including managing the campus network infrastructure (LANs and virtual LANs), network services (DNS and DHCP), network security and firewall, network monitoring and forensics, wireless networks, high-speed optical networks and Internet.  
Prerequisite(s): E T 277 or E T 377.

E T 480. Innovation and Product Development  
3 Credits (3)  
Experiential product design and development. Students will learn about different types of innovation, business models, and methods for developing products. Students will apply the scientific method to develop a product idea of their own. Students will propose ideas, develop hypotheses, test hypotheses, and iterate until they have validated their product idea or identified a need to pivot.  
Prerequisite(s)/Corequisite(s): (COMM 1115G or COMM 1130G or AXED 2120G or HNRS 2175G).

E T 481. Engineering Principles for Elementary Teachers  
3 Credits (3)  
Introduction to hands-on engineering principles and projects useful for application in the Elementary classroom. Restricted to: Masters of Arts in Education in Elementary Mathematics and Science majors.

E T 482. Manufacturing Technology  
3 Credits (2+2P)  
Fundamentals of computer aided manufacturing (CAM) and computer numerical control (CNC) machining. Students will learn how to program several variants of CNC machines, using both G/M code programming and computer aided manufacturing software. Emphasis will be on the effective design of parts to be made on CNC machines along with a hands on lab to give students experience on CNC machines. Students will individually design, manufacture, and keep items such as keychains, bottle openers, LED clocks, ergonomic handles, and license plates.  
Prerequisite(s): E T 210 and E T 217.

E T 490. Selected Topics  
1-3 Credits  
Selected topics in engineering technology and related areas.  
Prerequisite: consent of instructor.

E T 505. Special Topics in Information Technology  
3 Credits (3)  
Contemporary topics in Information Technology Restricted to: M-IT majors.

E T 539. Advanced Enterprise Security  
3 Credits (3)  
Advanced enterprise security design and analysis. Identification and minimization of cyber threats. Restricted to: M-IT majors.

E T 551. Enterprise Architecture I  
3 Credits (3)  
A study of current enterprise architecture methodologies, tools, and techniques. Restricted to: M-IT majors.

E T 552. Enterprise Architecture II  
3 Credits (3)  
Advanced topics in enterprise architecture including availability, access, and architecture map development. Restricted to: M-IT majors.  
Prerequisite(s): E T 551.

E T 555. Virtualization  
3 Credits (3)  
An analysis and review of system and IT virtualization techniques. Restricted to: M-IT majors.

E T 562. Development and Operations  
3 Credits (3)  
Software development including Python scripting. Operations programming. Restricted to: M-IT majors.

E T 577. Advanced Computer Networking  
3 Credits (3)  
Advanced networking design and analysis. Modernization of infrastructures. Restricted to: M-IT majors.

E T 583. Mobile App Programming and Development  
3 Credits (3)  
Planning and creation of mobile device applications. Programming tools and technical design considerations. Entrepreneurship and App development. Restricted to: M-IT majors.

E T 585. White Hat System Testing  
3 Credits (3)  
System penetration testing and repair. Review of methods utilized to gain access to unprotected systems. Testing system repairs and fixes for future prevention. Test documentation. Restricted to: M-IT majors.
E T 595. Capstone Projects in Information Technology
3 Credits (3)
Capstone course. Practical application of student's cumulative
Information Technology knowledge to an assigned design projects.
Project management skills. May be repeated up to 6 credits. Consent of
Instructor required. Restricted to: M-IT majors.