Course Descriptions: NET, EET & NSM

NET and EET undergraduate catalog courses 2016+

BS(NET) & AAS(Technology-Computer Electronics) programs

and

NSM Graduate catalog courses 2016+

MS(AETM-NSM) program

Dept. of Applied Engineering & Technology (AE&T)

Eastern Kentucky University

NET (Networking Technology) Courses

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NET 302 PC Troubleshooting & Construction. (3) I, II. Prerequisite: TEC 161 or INF 104 or higher or CSC 140 or higher or CIS 212 or higher. Construction, operation and troubleshooting microprocessors, system memory, computer architecture, video types, monitors, hard drives, mice, cabling, notebook computers and printers, modern operating systems, and application programs. Building computer systems to specific requirements. 2 Lec/2 Lab.

NET 303 LANs & PC Communications. (3) I, II. Prerequisite: TEC 161 or INF 104 or higher or CSC 140 or higher or CIS 212 or higher and a grade of "C" or better in MAT 095 or a minimum math ACT score of 18 or a minimum SAT math score of 490. Installing, configuring, managing, and troubleshooting network and computer systems communications hardware and software. 2 Lec/2 Lab.

NET 343 Network Switches & Routers. (3) A. Prerequisite: NET 303 or CIS 375. Cisco internetworking, switching, IOS, routing, VLAN's, access lists, and WAN protocols are covered in a combination of lecture, demonstration, and laboratory. 2 Lec/2 Lab.

NET 344 Advanced Network Switches & Routers (3) A. Prerequisite: NET 343. Configure and troubleshoot small to mid-sized switched LANs. Principles of switch and router startup, configuration and management, VLAN, trunking, STP, advanced routing, WAN, scaling IP address space. Configure, apply and verify Access Control Lists. 2 Lec/2 Lab.

NET 349 Applied Learning in NET (1-8) I, II. Formerly EET 349. Prerequisite: departmental approval, sophomore (30-59 hours) or higher standing and minimum of 2.0 GPA. Work under faculty and field supervisors in placements related to academic studies. Transfer students must have completed at least 12 hours of coursework at EKU. A minimum of 80 hours work required for each academic credit. Credit will not be awarded for both NET 349 and EET 349.

NET 354 Microcomputer & Network Security. (3) I, II. Prerequisite: NET 303 or CIS 375. Security considerations in computer systems and networks using appropriate hardware and software. Topics include malware, encryption, VPNs, ACLs, firewalls, Wi-Fi, and secure protocols. Testing, configuring, managing and troubleshooting security in network systems. 2 Lec/2 Lab.

NET 367a Exit Exam for AAS in Tech, with Computer Electronics (0) A. Prerequisite: Consent of Advisor. Registration in NET 367A is required of all undergraduate A.A.S. students in the Technology program specializing in Computer Electronics program for the term in which they wish to take their comprehensive examination.

NET 367b Exit Exam for Minor in Computer Electronics Technology (0) A. Prerequisite: Consent of Advisor. Registration in NET 367b is required of all undergraduate students in the Minor for Computer Electronics Technology program for the term in which they wish to take their comprehensive examination.

NET 395 Special Topics in NET. (2-3) A. Prerequisite: 30 credit hours or more completed, and (EET 252 or NET 303). Emerging technologies in the area of Network security and electronics (NET): May be repeated up to a maximum of 9 hours provided subject matter differs each time. Lec/Lab.

NET 399 Associate Degre Capstone. (3) II. Prerequisite: 30 credit hours or more completed, with a minimum of 9 semester hours of NET coursework completed, and a minimum of 9 semester hours of EET coursework completed. A project and research oriented course which serves as a capstone experience at the Associate Degree level. Design, implementation, analysis, and troubleshooting of electronic and computer technology related systems, and managing a technical project.

NET 403 Advanced LANs and PC Communication. (3) A. Prerequisite: NET 303 or CIS 375. This course will cover installation, configuration, troubleshooting and maintaining common server platforms. The participants will be given the opportunity to setup and manage network hardware, operating systems and applications. 2 Lec/2 Lab.

NET 440 Fiber-optics & Communications. (3) A. Prerequisite: EET 257, MAT 120 or higher, and PHY 101. Principles of communication over fiber and other wired/wireless media; digital and analog data transmission; modulation and multiplexing of data. Communication system components, safety, testing and troubleshooting of fiber-optic and communication systems. 2 Lec/2 Lab.

NET 454 Wireless/WAN Security. (3) A. Prerequisites: (NET 303 or CIS 375) and NET 354 Security considerations in wireless and WANs. Wi-Fi, 802.11x, WPA, RADIUS, encryption, VPNs, VLANs, AAA authentication, Network Security Appliances, and secure protocols. Laboratory based configuration and security testing of WAPs, appliances and servers. 2 Lec/2 Lab.

NET 467 Exit Exam for BS in NET (0) A. Prerequisite: Consent of Advisor. Registration in NET 467 is required of all undergraduate B.S. (NET) students for the term in which they wish to take their comprehensive examination, including the exit exam and advisor approved certification or license.

NET 499 Senior Capstone. (3) II.
Prerequisite: 90 credit hours or more completed, with a minimum of 18 semester hours of NET coursework completed, and a minimum of 9 semester hours of EET coursework completed, and AEM 310W. A project and research oriented course which serves as a capstone experience at the Bachelor Degree level. Design, implementation, analysis, and troubleshooting of networking, computers and electronics technology related systems, and managing a technical project.

EET (Electricity and Electronic Technology) Courses

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EET 251 Electricity and Electronics. (3) I, II. Prerequisite: Grade of at least "C" in MAT 095 or a minimum math ACT score of 18 or a minimum SAT math score of 490. Principles of basic electricity, circuit operation, and electronics. Topics include electrical components, measurements, power, characteristics of AC-DC, basic circuit laws, circuit simulation, magnetism, energy conversion, and sources. 2 Lec/2 Lab.

EET 252 Digital Electronics. (3) I, II. Prerequisite: grade of at least "C" in MAT 090 or equivalent. A survey of digital electronics fundamentals and applications. Topics include number systems, digital mathematics, logic families, logic gates, multiplexers, demultiplexers, comparators, counters, decoders, displays, and converters. 2 Lec/2 Lab.

EET 253 Microprocessor Control Systems.

(3) A. Prerequisite: EET 251 and 252. The operation and application of microprocessor-based control systems in electro-mechanical project environments. Topics include data, address, and control signals; memory; software; interfacing digital and analog devices; ports; and data communications. 2 Lec/2 Lab.

EET 254 Machine Language for Microcontrollers. (3) A. Prerequisite/Corequisite: EET 252. Machine language programming for ROM based microprocessor based industrial controllers. Emphasis on software manipulation of I/O control devices in real-time, interrupt driven, process control environments. 2 Lec/2 Lab.

EET 257 Electronic Devices and Circuits. (3) A. Prerequisite: EET 251. An analysis of the characteristics of solid state devices and the common circuits that utilize these devices. Emphasis on problem solving supplemented by laboratory activities and demonstration of electronic circuits and devices. 2 Lec/2 Lab.

EET 349 A-N Cooperative Study: CET/ CEN. (1-8) I, II. Prerequisite: departmental approval, sophomore (30-59 hours) or higher standing and minimum of 2.0 GPA. Work under faculty and field supervisors in placements related to academic studies in Computer Electronics Technology (CET) or Computer Electronic Networking (CEN). 1-8 credit hours per semester or summer. Transfer students must have completed at least 12 hours of coursework at EKU. A minimum of 80 hours work required for each academic credit.

EET 350 Industrial Electronics I. (3) A. Prerequisite: EET 257. Principles of timing, power control circuitry, transducers, and programmable controllers in commercial and industrial applications. 2 Lec/2 Lab.

EET 351 Programmable Logic Controllers. (3) A. Prerequisite: EET 251 or 252. The study of programmable logic controllers (PLCs). PLC functioning theory, selection, wiring, and programming. 2 Lec/2 Lab.

EET 452 Electrical Power & Drives. (3) A. Prerequisites: EET 257, MAT 120 or higher, and PHY 101. Principles of electromagnetic induction as applied to the generation, distribution, conversion, control, and measurement of electrical power. Analysis of the electronics used for electrical drives. Installation, programming and maintenance of digital drives. 2 Lec/2 Lab.

NSM (Network Security Management) Courses – Graduate Level

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NSM 815 Foundations of Network Security
(3) A. Advanced network security auditing, defense techniques and countermeasures. Network security issues related to hardware and software, for small-to-medium business (SMB) and enterprise-level networks. 2 Lec/2 Lab.

NSM 845 Advanced Server Security (3)
A. Prerequisite: Departmental approval. Security management, planning, designing, performance tuning and troubleshooting servers for small-to-medium businesses (SMBs) and enterprises. Hardening services such as web, DNS, file, Directory, and Terminal access. 2 Lec/2 Lab.

NSM 865 Wireless & Mobile Security (3) A.
Prerequisite: Departmental approval. Advance wireless and mobile computing security consideration in small-to-medium business (SMB) and enterprise level networks: Security auditing, standards, protocols, vulnerabilities, attacks, countermeasures, network planning, management and troubleshooting. 2 Lec/2 Lab.

NSM 895 Special Topics in NSM: _____.
(3) A. Prerequisite: Departmental approval. Emerging technologies in the area of advanced computer networking or telecommunications security, including LAN/WAN/SAN system administration, hardware, software, virtualization, operating systems, scripting, and related industry certifications. 2 Lec/2 Lab. May be repeated up to 9 hours with different topics.