



Department of Applied Engineering and Technology
School of Applied Sciences and Technology
College of Business & Technology (2017-18)

Network Security Management Concentration

M.S. Degree in Applied Engineering and Technology Management

The AETM Masters Program

The Master of Science degree in Applied Engineering and Technology Management is for individuals interested in careers in industrial, technical, construction, agriculture operations, or network security management. Courses in the program are designed to cause students to examine principles, concepts, attitudes, and methods for dealing with many of the challenges that confront business and industry. This concentration will be of value to those who are currently employed in business or industry and have professional growth aspirations. It will also be of value to those who have recently completed undergraduate study and want more preparation before embarking upon their career.

Upon completion of a degree in Applied Engineering and Technology Management graduates will be able to:

- 1) Plan, implement, and analyze technical projects;
- 2) Demonstrate an ability to formulate and apply advanced technical problem solving and managerial concepts; and
- 3) Accurately synthesize their total program experience.

Admission Requirements

Applicants are expected to present proper prerequisite preparation or technical management experience. For the Network Security Management (NSM) concentration, applicants should have an understanding of wired and wireless computer network communications, prior educational or work experience related to managing computer network software and hardware, effective communication skills, and the ability to identify, analyze and solve computer network related problems. An undergraduate grade point average of 2.5 and individual Verbal and Quantitative scores of 144 or higher on the Graduate Record Examination are expected. Applicants may also submit scores on the Graduate Management Admission Test (GMAT) as a substitute for the GRE. GMAT scores of 420 or higher are expected. Applicants with cumulative undergraduate GPA's of 3.0 or higher, or 3.25 or higher in their last 60 hours of undergraduate work are exempt from the GRE/GMAT requirement.

For More Information

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**Network Security Management MS Degree Concentration
 University Requirements**

Major Requirements 18 hrs

- **AEM 801** Economics for Lean Operations
- **AEM 804** Project Management
- **NSM 815** Foundations of Network Security
- **NSM 845** Advanced Server Security
- **NSM 895** Special Topics in NSM
- **TEC 830** Creative Problem Solving

Synthesis Experience 6 hrs

AEM 820 (3 hrs) and AEM 821 (3 hrs), OR AEM 839 (6 hrs)

- **AEM 820** Technology Proposal (3 hrs)
- **AEM 821** Technology Project (3 hrs)
- **AEM 839** Applied Learning in Tech Management (6 hrs)

Supporting Course Requirements 6 hrs

This is not a complete list; other electives may be selected by advisement. Please check the pre-requisite requirements before enrolling.

- **AEM 706** Six Sigma Quality
- **AEM 730** Design of Experiments
- **AEM 802** Productivity Assessment and Analysis
- **AEM 805** Operations Research
- **CIS 826** Information Systems Applications
- **CIS 850** Management of Information
- **CIS 860** Contemporary Topics in Information Technology
- **CSC 720** Multimedia Systems and Forensics
- **CSC 730** Concepts of Programming Systems
- **CSC 738** Computer Crime and Forensics
- **CSC 744** Database Admin and Security
- **CSC 747** Network Forensics and Investigation
- **CSC 748** Personal Electronic Device Forensics
- **CSC 815** Computer Administration and Security
- **CSC 825** Network Applications and Security
- **CSC 834** Software Engineering and Project Management I
- **CSC 860** System Programming and Administration
- **EDC 810** K-12 Ed/Tech: Critical Issues
- **GBU 850** Legal, Ethical, and Social Environment of Business
- **HLS 830** Natural Hazards & Threats to the Nation.
- **MGT 850** Leading and Managing Organizations
- **QMB 850** Statistical Methods for Business
- **SSE 827** Issues in Security Management
- **STA 700** Applied Statistical Inference
- **STA 770** Quality Control and Reliability
- **TEC 860** Research in Technology

Network Security Management Exit Requirement 0 hrs

- **GRD 868b** Applied Engineering and Technology Management Oral Comprehensive Exam

Total Program Requirements 30 hrs



Network Security Management Major Course Descriptions

- AEM 801 Economics for Lean Operations** (3 hrs) Prerequisite: Cost management, budgeting, accounting, capital planning, and other topics necessary for making effective economic decisions from a lean perspective. Quantitative methods and computer applications used to formulate decisions relating to operations.
- AEM 804 Project Management** (3 hrs) Prerequisite: Departmental approval. Elements of managing projects including the use of modern project management software.
- NSM 815 Foundations of Network Security** (3 hrs) 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 hrs) Prerequisite: NSM 815 or 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 hrs) Prerequisite: NSM 815 or 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 hrs) Prerequisite: NSM 815 or 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.
- AEM 820 Technology Proposal** (3 hrs) Prerequisite: Departmental approval. An individually developed proposal related to a project typically encountered by a manager in a technical environment. The project proposal is to be approved by the student's graduate advisor.
- AEM 821 Technology Project** (3 hrs) Prerequisite: AEM820 or departmental approval. An individually developed project related to the solution of a typical problem encountered by a manager in a technical environment. The problem is to be approved by the student's graduate committee and the results presented in open forum.
- AEM 839 Applied Learning in Tech Management.** (3-6 hrs) Prerequisite: Departmental approval. Planned and supervised experience in industry. The experience must be for at least one semester and the plan of activities must be approved by the student's graduate committee. Minimum of eighty hours work required for each academic credit.
- TEC 830 Creative Problem Solving** (3 hrs) A review and analysis of basic and applied research in the development of creative behavior with emphasis on its application to industrial teaching and industrial problem solving. Students will be expected to complete a term project showing their creative abilities.