



Department of Applied Engineering and Technology  
*School of Applied Sciences and Technology*  
College of Business & Technology (2019-20)

# **Cyber Systems Security concentration**

M.S. Degree in Technology Management (CIP 15.1501)

## **M.S. in Technology Management**

The Master of Science degree in Technology Management is for individuals who are interested in careers industrial, technical, construction, agriculture operations, or cyber systems 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 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 Cyber Systems Security 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. A minimum undergraduate grade point average of 2.5 is expected.

## **For More Information**

Department of Applied Engineering and Technology  
307 Whalin Technology Complex  
Eastern Kentucky University  
521 Lancaster Avenue  
Richmond, KY 40475-3102  
Phone: 859-622-3232  
Web: <http://technology.eku.edu>



# MS Degree in Technology Management Cyber Systems Security concentration

## University Requirements

### Major Requirements.....9 hrs

- **AEM 801** Economics for Lean Operations
- **AEM 804** Project Management
- **TEC 830** Creative Problem Solving

### Cyber Systems Security concentration .....9 hrs

- **NSM 815** Foundations of Network Security
- **NSM 845** Advanced Server Security
- **NSM 895** Special Topics in NSM

### Supporting Course Requirements .....6 hrs

*This is not a complete list; other electives may be selected by advisement, including a number of MBA courses. Please check the pre-requisite requirements for these courses before enrolling.*

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>• <b>CSC 720</b> Multimedia Systems and Forensics</li> <li>• <b>CSC 730</b> Concepts of Programming Systems</li> <li>• <b>CSC 744</b> Database Admin and Security</li> <li>• <b>CSC 747</b> Network Forensics and Investigation</li> <li>• <b>CSC 748</b> Personal Electronic Device Forensics</li> <li>• <b>CSC 815</b> Computer Admin and Security</li> <li>• <b>CSC 825</b> Network Applications and Security</li> <li>• <b>CSC 834</b> Software Engineering and Project Management I</li> <li>• <b>CSC 835</b> Software Engineering and Project Management II</li> <li>• <b>CTE 800</b> Occupational Training Materials</li> <li>• <b>CTE 801</b> Occupational Training Methods</li> <li>• <b>CTE 888</b> Occupational Information</li> <li>• <b>EDC 810</b> K-12 Ed/Tech: Critical Issues</li> <li>• <b>HLS 830</b> Natural Hazards &amp; Threats to the Nation</li> <li>• <b>NSM 865</b> Wireless &amp; Mobile Security</li> </ul> | <ul style="list-style-type: none"> <li>• <b>PSY 804</b> Intro to Industrial-Organizational Psychology</li> <li>• <b>PSY 873</b> Organizational Psychology</li> <li>• <b>PSY 874</b> Organization Change and Development</li> <li>• <b>PSY 875</b> Training and Development</li> <li>• <b>SSE 827</b> Issues in Security Management</li> <li>• <b>SSE 828</b> Industrial Safety Management</li> <li>• <b>SSE 845</b> Personal/Environmental Hazards</li> <li>• <b>SSE 850</b> Ergonomics &amp; Human Factors</li> <li>• <b>SSE 851</b> Human Factors in Simple and Complex Systems</li> <li>• <b>SSE 852</b> Ergonomics Process &amp; Practice</li> <li>• <b>STA 700</b> Applied Statistical Inference</li> <li>• <b>STA 770</b> QC &amp; Reliability</li> <li>• <b>TEC 867</b> Independent Study in Technology</li> <li>• <b>UNP 700</b> Study Abroad</li> </ul> |
|---|--|

### Synthesis Experience .....6 hrs

- TEC 860** (3 hrs) and **AEM 821** (3 hrs), OR **AEM 839** (6 hrs)
- **TEC 860** Research in Technology (3 hrs)
  - **AEM 821** Technology Project (3 hrs)
  - **AEM 839** Applied Learning in Tech Management (6 hrs)

### Technology Management Exit Requirement .....0 hrs

- **GRD 868b** 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 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.
- TEC 860 Research in Technology** (3 hrs) A study of research and research methods as they apply in technological fields. Involves the development of a review of literature, a research proposal, and the use of descriptive and inferential statistics.