



TENNESSEE HIGHER EDUCATION COMMISSION

REGULAR CALENDAR ITEM: IV.B.

MEETING DATE: November 16, 2023

SUBJECT: New Academic Program
Middle Tennessee State University
Cybersecurity Management, Bachelor of Science
CIP Code: 11.1003 (Computer and Information Systems
Security/Auditing/Information Assurance)

ITEM TYPE: Action

ACTION RECOMMENDATION: Approval

PROGRAM DESCRIPTION

Middle Tennessee State University (MTSU) proposes a 120-credit hour, Bachelor of Science (BS) in Cybersecurity Management. The proposed program was developed in response to a gap in the workforce between available positions and skilled cybersecurity workers. The program curriculum will prepare students to join the workforce knowing how to design, manage, and apply appropriate tools and technologies to maintain security of data, systems, and infrastructure.

The proposed program will consist of 46 core credit hours of security related courses including systems design and cybersecurity management. Students who complete 18 of the 46 core credit hours can also obtain a minor in business administration. The anticipated completion time for the proposed program is four (4) years being delivered both online and on-ground. Graduates of the proposed program will prepare students to begin their careers with a focus on meeting security needs through the lens of both cybersecurity and business.

INSTITUTIONAL GOVERNING BOARD APPROVAL

The proposed Cybersecurity Management, BS program was approved by the Middle Tennessee State University Board of Trustees on June 20, 2023.

PROPOSED IMPLEMENTATION DATE

Summer 2024.

ALIGNMENT WITH STATE MASTER PLAN AND INSTITUTIONAL MISSION/STRATEGIC PLAN

The proposed Cybersecurity Management, Bachelor of Science aligns with the State Master Plan for Higher Education by increasing education attainment levels in a field aligned directly to a significant workforce demand for cybersecurity. The program will also help to address the state's economic development and research needs by preparing students for the sustained and growing careers in cybersecurity.

The proposed program will also align with the three (3) primary goals of the MTSU's Academic Master Plan:

- MTSU will advance academic quality through excellence in teaching, scholarship, and service and the celebration of MTSU's strengths.

- MTSU will promote student success and individual responsibility for accomplishments through a community dedicated to student-centered learning.
- MTSU will develop purposeful and sustainable partnering relationships and outreach.

Graduates of the proposed program will provide students with the skills required to work in the regional workforce, provide additional research and grant funding opportunities, and provide students with defined projects that will involve working with industry leaders.

CURRICULUM

The proposed program will consist of 120 hours of coursework and will be offered with both on-ground and online course options. The coursework will include 41 credits of general education; 46 credits of security-related core requirements; 18 credits which will constitute a minor in business administration; and 15 credits of electives. Six (6) new courses were developed for the implementation of the proposed program.

At the completion of the program, graduates will be able to:

- Apply principles of information systems design, development, and data management to support a secure computing environment.
- Demonstrate an understanding of the technologies needed to defend computer systems and infrastructure from cyberattacks.
- Develop the knowledge and skills needed to manage cybersecurity within an organizational environment.
- Design, develop, and communicate effective policies and procedures that support business needs and enhance cybersecurity capabilities.

PROGRAM PRODUCTIVITY

Projections for the Cybersecurity Management, BS program estimate that 29 students will enroll in the first year, with total enrollment of 71 by year five (5). The program will graduate its first students in year three (3).

	2023-24	2024-5	2025-26	2026-27	2027-28
Enrollment	29	47	56	64	71
Graduates	--	--	4	9	14

PROGRAM DUPLICATION

Currently, only two (2) public institutions, University of Tennessee, Martin and University of Tennessee, Southern, offer bachelor's degrees with programs in cybersecurity. Six (6) other public institutions offer programs with related concentrations in cybersecurity including Austin Peay State University, East Tennessee State University, Tennessee State University, Tennessee Technological University, University of Memphis, and University of Tennessee, Chattanooga.

STUDENT DEMAND

Seventy-five students in related programs were surveyed on their interest in a potential cybersecurity program. Eighty-five percent of respondents (64 students) indicated that they were extremely likely or likely to consider cybersecurity as a major, had it been available when they started at MTSU. Ninety-six percent of respondents (72 students) stated it was very important or important to have an

undergraduate degree in cybersecurity. Additionally, 84 percent of respondents (63 students) indicated that they would choose cybersecurity as a second major if the option were available.

OPPORTUNITIES FOR PROGRAM GRADUATES

The proposed program would provide a direct response to demonstrated workforce needs. Current projections provided by the Bureau of Labor Statistics indicate that IT occupations will increase much faster than average (15 percent) through 2031. According to the Economic Modeling Specialist International (EMSI), from mid-2021 through mid-2022, there were 651 unique job postings in cybersecurity in the Middle Tennessee area (Davidson County, Rutherford County, Williamson County) with a median annual salary of \$100,096. The Academic Supply for Occupational Demand Report provided by the Tennessee Higher Education Commission notes security positions also support areas such as tech consulting or headquarter operations. Nationally, across over 322,000 unique job postings, the median salary for cybersecurity positions is slightly higher at \$101,248 with 93 percent of jobs requiring a bachelor's degree or higher.

Several letters of support were received from Tom Corridon, Chief Information Security Officer at Bridgestone Americas, Inc., and Elise Cambournac, President & CEO of Greater Nashville Technology Council.

INSTITUTIONAL CAPACITY TO DELIVER THE PROGRAM

The proposed program anticipates minimal institutional restructuring and will be housed in the Information Systems and Analytics Department under the Jones College of Business. The proposed program will utilize existing computer classrooms and labs. Also, current information technology and departmental labs are sufficient to meet the program's needs. One (1) contingent faculty line will convert to an instructor line in year one (1), with no anticipated additional cost.

EXTERNAL JUDGEMENT

An external review of the proposed program was conducted during a site visit on June 29, 2023 by Dr. Nicole L. Beebe, an endowed chair and professor of Cybersecurity from the University of Texas at San Antonio. The site visit included meetings with campus administrators and faculty from MTSU, as well as current MTSU students and industry partners. The visit also included a tour of classroom and computer labs. Dr. Beebe recommended approval of the proposed program, noting "The overall program design is good. The proposed classes, required and electives, are aligned with employer needs." and "the program is the balance between science/major dedicated hours and business management coursework," thereby strengthening both. Dr. Beebe also stated that the BS with a management minor is one (1) of the program's biggest design strengths.

ASSESSMENT AND POST-APPROVAL MONITORING

An annual performance review of the proposed program will be conducted for the first five (5) years following program approval. The review will be based on benchmarks established in the approved proposal. At the end of this period, the campus, institutional governing board, and THEC staff will perform a summative evaluation. If benchmarks are not met during the monitoring period, the Commission may recommend that the institutional governing board terminate the program.

PROGRAM COSTS

The proposed one-time and recurring expenditures for the Cybersecurity Management, BS program are listed in the Financial Projections Table below. Most of the program costs are associated with equipment, marketing, and travel.

Table 1: Estimated Costs to Deliver the Proposed Program

Estimated Costs to Deliver the Proposed Program						
One-Time Expenditures						
Category	Planning	Year 1	Year 2	Year 3	Year 4	Year 5
Accreditation						
Consultants	\$1,500					
Equipment		\$5,000	\$5,000	\$5,000	\$5,000	
Information Tech						
Library						
Marketing						
Facilities						
Travel						
Other						
Total One-Time Expenditures	\$1,500	\$5,000	\$5,000	\$5,000	\$5,000	
Recurring Expenditures						
Category	Planning	Year 1	Year 2	Year 3	Year 4	Year 5
Accreditation						
Consultants						
Equipment						
Information Tech						
Library						
Marketing		\$5,000	\$2,000	\$1,500	\$1,500	\$1,500
Facilities						
Travel		\$7,500	\$7,500	\$7,500	\$7,500	\$7,500
Other:						
Total Recurring Expenditures		\$12,500	\$9,500	\$9,000	\$9,000	\$9,000
Grand Total (One-Time and Recurring)	\$1,500	\$17,500	\$14,500	\$14,000	\$14,000	\$9,000