UNIVERSITY SYSTEM of MARYLAND

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Board of Regents ~ Committee on Education Policy and Student Life and Safety

Thursday, April 3, 2025 ~ 9:30 a.m.

Zoom Details to be Provided to Committee
Public Listen-Only Access: 443-353-0686 – Conference ID: 639 963 322

Public Session Agenda

Action Items

1. Academic Program Proposals
    a. Frostburg State University: Bachelor of Science in Applied Computer Science
    b. University of Maryland Eastern Shore: Bachelor of Science in Electrical Engineering
    c. University of Maryland Eastern Shore: Bachelor of Science in Mechanical Engineering

Information Items

2. Results of Periodic (7-Year) Reviews of Academic Programs
3. New Program 5-Year Enrollment Review
4. Update on Teacher Preparation

Action Item

5. Motion to Adjourn and Reconvene in Closed Session

UNIVERSITY SYSTEM of MARYLAND

BOARD OF REGENTS
SUMMARY OF ITEM FOR ACTION, INFORMATION, OR DISCUSSION

TOPIC: Frostburg State University (FSU) proposal for a new Bachelor of Science degree in Applied Computer Science

COMMITTEE: Education Policy and Student Life and Safety

DATE OF COMMITTEE MEETING: April 3, 2025

SUMMARY:
Frostburg State University (FSU) seeks approval to establish a new Bachelor of Science in Applied Computer Science at the University system of Maryland at Hagerstown (USMH). This program is a new program, and a waiver has been requested from the Maryland Higher Education Commission to allow the program to be offered first at USMH and to be offered both in-person and online. It will be offered by faculty from the FSU Department of Computer Science and Information Technologies. The department currently offers BS degrees in Computer Science, Computer Information Technologies, Cybersecurity and Information Assurance, and Information Technology. This program has been developed with the particular needs of the region in mind, as well as the needs of working adults. Hagerstown Community College has been designated as a National Center of Academic Excellence in Cyber Defense (CAE-CD), and it has associate degree programs that can align with this new degree, and articulations are being developed.

This proposed program is Applied Computer Science is designed to provide students with a comprehensive education in the practical applications of computing, focusing on critical areas such as software development, cybersecurity, data analytics, and artificial intelligence. The program responds not only to keen State demands in computer science application, including cybersecurity, but also specifically regional demands for people with this preparation.

ALTERNATIVE(S): The Regents may not approve the program or may request further information.

FISCAL IMPACT: No additional funds are required. The program can be supported by the projected tuition and fee revenue.

CHANCELLOR'S RECOMMENDATION: That the Education Policy and Student Life and Safety Committee recommend that the Board of Regents approve the Frostburg State University proposal to offer the BS in Applied Computer Science and that it can first be offered at USMH.

COMMITTEE RECOMMENDATION:	DATE: April 3, 2025
BOARD ACTION:	DATE:
SUBMITTED BY: Alison M. Wrynn 301-445-1992	awrynn@usmd.edu

FROSTBURG
STATE UNIVERSITY

March 14, 2024

Chancellor Jay A. Perman, MD
University System of Maryland
3300 Metzerott Rd.
Aldelphi, MD 20783

Dear Chancellor Perman,

The Department of Computer Science at Frostburg State University (FSU) seeks approval to establish a new Bachelor of Science in Applied Computer Science at the University System of Maryland at Hagerstown (USMH). This program is designed to provide students with a comprehensive education in the practical applications of computing, focusing on critical areas such as software development, cybersecurity, data analytics, and artificial intelligence.

Proposal Title:	New Program
Proposed Program Title:	Applied Computer Science (USMH)
Award Level:	Bachelor of Science
HEGIS:	110701
CIP:	070100

We would appreciate your support for the proposed new program at USMH. If you have any questions, please reach out to our Associate Vice President of Student Success Dr. Sara-Beth Bittinger at sbittinger@frostburg.edu.

Sincerely,

Darlene Brannigan Smith, PhD
Interim President

pc: Dr. Candace Caraco, Associate Vice Chancellor for Academic Programs, Academic and Enrollment Services & Articulation, USM
Dr. Lawrence Weill, Interim Provost and Vice President for Academic Affairs, FSU
Dr. Sara-Beth Bittinger, Associate Vice President of Student Success, FSU
Dr. Sudhir Singh, Dean of the College of Business, Engineering, and Computational & Mathematical Sciences, FSU

UNIVERSITY SYSTEM OF MARYLAND INSTITUTION PROPOSAL FOR

X	New Instructional Program
	Substantial Expansion/Major Modification
	Cooperative Degree Program
	Within Existing Resources, or
	Requiring New Resources

Frostburg State University

Institution Submitting Proposal

Applied Computer Science (USMH)

Title of Proposed Program

Bachelor of Science
Award to be Offered

Fall 2025
Projected Implementation Date

070100
Proposed HEGIS Code

110701
Proposed CIP Code

Computer Science and Information Technologies
Department in which program will be located

Nooh Bany Muhammad
Department Contact

301-687-4719
Contact Phone Number

nbany@frostburg.edu
Contact E-Mail Address

Darlene Brannigan Smith, PhD
Interim President

March 13, 2025
Date

Office Use Only: PP#

MHEC
Creating a state of achievement

Cover Sheet for In-State Institutions
New Program or Substantial Modification to Existing Program

Institution Submitting Proposal	Frostburg State University

Each action below requires a separate proposal and cover sheet.

- ○ New Academic Program
- ○ New Area of Concentration
- ○ New Degree Level Approval
- ○ New Stand-Alone Certificate
- ○ Substantial Change to a Degree Program
- ○ Cooperative Degree Program
- ○ Off Campus Program
- ◉ Offer Program at Regional Higher Education Ctr.

Department Proposing Program	Computer Science & Information Technologies	
Degree Level and Degree Type	Bachelor of Science (B.S.)	
Title of Proposed Program	Applied Computer Science (USMH)	
Total Number of Credits	120	
Suggested Codes	HEGIS: 0701.00	CIP: 11.0701
Program Modality	○ On-campus ○ Distance Education (*fully online*) ◉ Both	
Program Resources	◉ Using Existing Resources ○ Requiring New Resources	
Projected Implementation Date	◉ Fall ○ Spring ○ Summer	Year: 2025
Provide Link to Most Recent Academic Catalog	URL: https://www.frostburg.edu/academics/academic-catalogs.php#/programs/BJjN_hlv_?q=APPLIED%20COMPUTER%20SCIENCE	
Preferred Contact for this Proposal	Name: Nooh Bany Muhammad	
	Title: Assistant Professor	
	Phone: (301) 687-4719	
	Email: nbany@frostburg.edu	
President/Chief Executive	Type Name: Darlene Brannigan Smith	
	Signature: Darlene B Smith	Date: 3/12/2025
Approval/Endorsement by Governing Board	Type Name:	
	Signature:	Date:

Revised 5/7/18

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UNIVERSITY SYSTEM OF MARYLAND INSTITUTION PROPOSAL FOR

X	New Instructional Program
	Substantial Expansion/Major Modification
	Cooperative Degree Program
	Within Existing Resources, or
	Requiring New Resources

Frostburg State University

Institution Submitting Proposal

Applied Computer Science (USMH)

Title of Proposed Program

Bachelor of Science	**Fall 2025**
Award to be Offered	Projected Implementation Date
070100	**110701**
Proposed HEGIS Code	Proposed CIP Code
Computer Science and Information Technologies	**Nooh Bany Muhammad**
Department in which program will be located	Department Contact
301-687-4719	**nbany@frostburg.edu**
Contact Phone Number	Contact E-Mail Address
Darlene Brannigan Smith, PhD Interim President	Date

Executive Summary

Proposal for a New Program: Bachelor of Science in Applied Computer Science (USMH)
Institution: Frostburg State University
Department: Department of Computer Science & Information Technologies
Proposed HEGIS Code: 0701.00
Proposed CIP Code: 11.0701
Degree to be Awarded: Bachelor of Science (B.S.)
Proposed Initiation Date: Fall 2025

Overview
The Department of Computer Science at Frostburg State University (FSU) seeks approval to establish a new Bachelor of Science in Applied Computer Science at the University system of Maryland at Hagerstown (USMH). This program is designed to provide students with a comprehensive education in the practical applications of computing, focusing on critical areas such as software development, cybersecurity, data analytics, and artificial intelligence.

Requested Actions
1. **New Major Degree Program:** Establish the Bachelor of Science in Applied Computer Science.
2. **New Course Addition:**
    - **CSOC 456: Applied Artificial Intelligence**
      This course will be a core offering within the program, providing students with hands-on experience in AI technologies, emphasizing both practical applications and ethical considerations.

Rationale
The BS degree in Applied Computer Science will build upon the foundation laid by the current offerings in our Computer Science & Information Technologies department. This new program is a strategic expansion that responds to the high demand for professionals with applied computing skills. The transition to a standalone degree program will enhance our department's ability to attract students interested in practical, technology-driven careers, thus expanding our academic reach and impact.

With a robust faculty background in computer science, cybersecurity and information technology, information systems and applied computer science, the B.S. degree will offer students the essential skills needed to excel in the workplace. Our faculty members bring a wealth of professional and academic experience, enriching the educational experience for students. This depth of expertise will prepare students for roles such as software developers, cybersecurity analysts, artificial intelligence specialists, and other technology-focused positions.

The addition of the Applied Computer Science degree complements the Computer Science & Information Technologies Departments' existing strengths, making Frostburg State University a more attractive choice for students pursuing technology-related fields. This expansion will enable the university to produce more graduates equipped to meet the demands of the U.S. technology sector, thereby contributing to alleviating the national shortage of skilled professionals in this area.

Section A. Centrality to Institutional Mission and Planning Priorities:

1. Description of the Program and Its Alignment with the Institution's Mission

The Bachelor of Science in Applied Computer Science at Frostburg State University (FSU) is structured to provide a comprehensive education in practical and applied computing skills, essential for addressing modern challenges in technology-driven industries. This program aligns with the University's mission by focusing on experiential learning and preparing students for professional success. FSU, recognized as a public comprehensive and teaching university, has a longstanding commitment to fostering intellectual growth and equipping students with critical problem-solving, communication, and decision-making skills. The Applied Computer Science program contributes to this mission by offering a curriculum that emphasizes practical applications in software development, cybersecurity, data analytics, and artificial intelligence.

2. Support for the Institution's Strategic Goals and Institutional Priority

The proposed program supports Frostburg State University's strategic goals, specifically:

- **Focusing Learning on Knowledge Acquisition and Application:** The program integrates innovative practices and technology into the curriculum, ensuring students acquire essential skills and knowledge for success in the workforce. By infusing applied learning throughout the curriculum, students are prepared to tackle real-world problems effectively.
- **Providing Engaging Experiences:** The program includes a robust advising and support structure, guiding students from application through graduation. It incorporates career and professional development opportunities, fostering a campus climate that enhances student well-being and cultural competence.
- **Expanding Regional Outreach and Engagement:** The program supports economic development in Western Maryland through initiatives that prepare students to meet the region's workforce needs. It also promotes the University's strengths and successes, attracting students and faculty dedicated to addressing community needs.
- **Aligning University Resources:** The program aligns with the University's efforts to meet student and workforce expectations through targeted recruitment and retention plans. It also supports the strategic allocation of human, fiscal, and physical resources, ensuring the program's sustainability and effectiveness.

3. Funding for the First Five Years of Program Implementation

The program will be financially supported through a combination of reallocated funds, tuition and fee revenue. All resource estimates are based on current rates without inflation.

The financial plan for the first five years includes:

- **Reallocated Funds:** Resources from existing programs and faculty positions will be redirected to support the new program, ensuring that it is adequately staffed and resourced.

- **Tuition and Fee Revenue:** Projected student enrollment, including both full-time and part-time students, will generate additional revenue to sustain the program.

- **External Funding:**
  N/A

- **Other Sources**
  N/A

These measures are detailed in Section L, where a comprehensive financial plan, including projected revenues and expenditures, is presented.

4. Commitment to Ongoing Support and Program Continuation

a) Ongoing Administrative, Financial, and Technical Support:
FSU is committed to providing continuous administrative, financial, and technical support for the program. This includes maintaining a dedicated faculty team, ensuring access to modern facilities and technology, and offering professional development opportunities for faculty to stay current in their fields. The University will also provide marketing and recruitment support to attract a diverse and talented student body.

b) Continuation of the Program:
The University guarantees the continuation of the program, ensuring that all enrolled students can complete their degrees. This commitment is backed by strategic planning and resource allocation, which prioritize the program's long-term viability and alignment with institutional goals. Our university is dedicated to supporting the program as a key component of its academic offerings, contributing to the University's mission and strategic objectives.

Section B. Critical and Compelling Regional or Statewide Need as Identified in the State Plan

1. Demonstrating Demand and Need for the Program

a) The Need for the Advancement and Evolution of Knowledge:
The rapid technological advancements and the growing complexity of computing systems necessitate the continuous evolution of educational programs in computer science. The Bachelor of Science in Applied Computer Science at Frostburg State University addresses this need by providing a curriculum that incorporates cutting-edge topics such as artificial intelligence, cybersecurity, and data analytics. The program is designed to equip students with the latest knowledge and practical skills required to innovate and lead in the technology sector. This aligns with the broader societal need to develop a workforce capable of advancing technology and contributing to economic growth.

b) Societal Needs, Including Expanding Educational Opportunities:
This program offers significant opportunities for minority and educationally disadvantaged students to pursue careers in high-demand technology fields. By providing access to quality education in applied computer science, FSU aims to reduce educational disparities and promote inclusivity. The program's structure includes support systems such as academic advising, career counseling, and tutoring, which are crucial for ensuring the success of underrepresented groups. Additionally, the program's emphasis on practical skills makes it particularly attractive to students who may not have previously considered a traditional computer science pathway.

c) Strengthening Historically Black Institutions (HBIs):
While Frostburg State University is not an HBI, the introduction of this program aligns with statewide efforts to enhance the capacity of all Maryland institutions to provide high-quality and unique educational programs. The Applied Computer Science program contributes to the overall goal of offering diverse and specialized education options across the state's higher education landscape. The program's focus on practical applications and industry alignment serves as a model that can be emulated by other institutions, including HBIs, to strengthen their offerings in technology education.

2. Consistency with the Maryland State Plan for Postsecondary Education

The Bachelor of Science in Applied Computer Science program is consistent with the goals and priorities outlined in the 2022 Maryland State Plan for Postsecondary Education. Specifically, the program aligns with the following goals and priorities:

- **Goal 1: Equitable Access:** The program aims to increase access to high-quality education in applied computer science, particularly for minority and educationally disadvantaged students. By offering a curriculum that is both rigorous and practical, the program provides an equitable pathway for all students to enter the technology workforce.
- **Priority 5: Commitment to Quality Academic Programs:** The program emphasizes the delivery of high-quality, relevant education that meets industry standards and prepares students for immediate employment. The curriculum is designed in consultation with industry partners and incorporates best practices in teaching and learning, ensuring that graduates are well-prepared to meet the demands of the technology sector.
- **Priority 7: Lifelong Learning:** The program supports lifelong learning by providing opportunities for continuing education and professional development. This includes offering advanced courses and certificates that allow students and professionals to stay current with technological advancements. The flexible structure of the program also accommodates adult learners and working professionals seeking to enhance their skills.

The proposed Bachelor of Science in Applied Computer Science program not only meets the immediate educational and workforce needs of the region and state but also contributes to long-term goals of fostering innovation and enhancing the quality of life for Maryland's residents. By aligning with the 2022 Maryland State Plan, FSU reaffirms its commitment to providing high-quality, accessible education that prepares students for success in a rapidly changing world.

Section C. Quantifiable and Reliable Evidence and Documentation of Market Supply and Demand in the Region and State

1. Potential Industries, Employment Opportunities, and Expected Level of Entry
Graduates of the Bachelor of Science in Applied Computer Science program at FSU can expect to find employment in a variety of industries, including technology, finance, healthcare, government, cybersecurity, and education. The program prepares students for roles such as software developers, information security analysts, and data scientists, with opportunities ranging from entry-level positions to mid-level management roles.

2. Data and Analysis Projecting Market Demand and Job Availability
According to the U.S. Bureau of Labor Statistics (BLS) and the Maryland Department of Labor, the demand for professionals in applied computer science fields is projected to grow significantly from 2022 to 2032:

- **Software Developers:** The BLS projects a 26% growth in employment for software developers, quality assurance analysts, and testers. This demand is driven by the expansion of software development, particularly in areas such as artificial intelligence, Internet of Things (IoT), and other automation technologies.

- **Information Security Analysts:** Employment for information security analysts is expected to increase by 32%, reflecting the critical need for cybersecurity professionals to protect organizations from increasing cyber threats.

- **Data Scientists:** Data scientist positions are projected to grow by 35%, a much faster rate than the average for all occupations. The growth is due to the rising importance of big data analytics across various sectors, including business, healthcare, and government (Bureau of Labor Statistics) (Bureau of Labor Statistics).

3. Evidence of Market Surveys and Anticipated Vacancies
Market surveys and industry feedback highlight a strong demand for graduates with practical skills in applied computer science. Employers have emphasized the need for professionals capable of implementing advanced computing technologies in real-world applications.

Anticipated vacancies include:

- **Software Developers:** An estimated 153,900 new job openings annually nationwide, with a substantial portion in Maryland.
- **Cybersecurity Analysts:** Over 5,000 new positions expected statewide, reflecting the increasing focus on information security.
- **Data Scientists:** Approximately 17,700 openings annually, driven by the increasing reliance on data analytics (Bureau of Labor Statistics).

4. Current and Projected Supply of Prospective Graduates

The current supply of graduates in Maryland does not fully meet the projected demand for applied computing professionals. According to the Maryland Department of Labor, there were approximately 1,200 graduates in computing-related fields in 2023. However, with roles like software developers, information security analysts, and data scientists expected to grow by 31.22%, 38.81%, and 39.32% respectively by 2032, the state will need an additional 500 to 700 graduates annually to fill this gap. Although several institutions in the state offer related programs, FSU's new program is uniquely positioned with its focus on applied skills and practical training, which is expected to attract a significant number of students and help bridge the gap in this high-demand field. It is also being offered in an area of the state where there are fewer opportunities to complete this type of bachelor's degree.

Current Supply: Limited availability of graduates with the necessary practical experience and industry-aligned skills, particularly in specialized areas like software development, cybersecurity, and AI.

Projected Supply: The new program at FSU aims to produce around 25-30 graduates annually, contributing to the *regional* workforce and helping to fill the projected vacancies in high-demand fields.

The data and analysis clearly indicate a compelling need for the program. The program is strategically positioned to address the current and future needs of the job market, providing students with the skills and knowledge necessary to succeed in a rapidly evolving technological landscape.

Section D. Reasonableness of Program Duplication:

1. Similar Programs in the State and Geographic Area

In Maryland, while there are several universities offer computer science programs, none provide the applied focus that FSU's new program delivers, examples include:

- **University of Maryland College Park (UMCP):** Offers a comprehensive computer science program with concentrations in artificial intelligence, cybersecurity, and data science.

- **University of Maryland Baltimore County (UMBC):** Focuses on both theoretical and applied aspects of computer science, including specializations in cybersecurity.
- **Towson University:** Provides a Bachelor of Science in Computer Science with practical components in software engineering and security.
- **Capitol Technology University:** Specializes in applied sciences, with strong programs in cybersecurity and software engineering.
- **Morgan State University:** Offers a diverse computer science curriculum, including software development and information systems.

2. Justification for the Proposed Program

The new program at USMH is specifically designed to meet the regional demand for practical computing skills. The program's distinct focus on applied learning and hands-on experience sets it apart from more traditional, theory-based programs. The proposed program was well received by current students, industry respondents, faculty at Hagerstown Community college, and elsewhere very well. Top examples of characteristics that make this program stand apart from others include:

- **Applied Learning:** Emphasis on real-world applications, including projects and internships, directly preparing students for the workforce.
- **Flexible Delivery:** Online, blended and hybrid options cater to non-traditional students, including working professionals and veterans.
- **Regional Focus:** Addresses the specific needs of Western Maryland, an area underserved by similar programs.
- **Great Option for Local Students:** Offers an excellent opportunity to earn a BS degree in the Hagerstown region, where such programs are limited.
- **Strong Industry and Student Reception:** Surveys indicate that this degree is highly valued by both industry professionals and students, who see it as a well-received and relevant credential.

These elements make FSU's program unique and necessary.

Section E. Relevance to High-demand Programs at Historically Black Institutions (HBIs)

The new program is strategically designed to meet the unique needs of the Western Maryland region. This program focuses on delivering practical and applied computing skills, including software development, cybersecurity, and data analytics. Unlike many HBIs, which are often located in urban settings and serve diverse urban populations, the USMH campus primarily caters to students from rural areas. The program's emphasis on industry-aligned skills, practical applications, and hands-on experiences is tailored to meet the specific economic and technological demands of these regions.

This distinction ensures that the FSU program at USMH does not overlap with the high-demand programs at HBIs, which often focus on culturally significant curricula and support systems tailored to their unique student demographics. Instead, it provides an

essential complement to the educational landscape, offering opportunities in applied technology education that are not the primary focus of HBIs. By focusing on different regional and demographic needs, the FSU program respects and preserves the specialized missions and contributions of HBIs in promoting cultural heritage, social justice, and equity.

Section F: Relevance to the Identity of Historically Black Institutions (HBIs)

The implementation of the new program at the USMH campus is carefully designed to avoid impacting the unique institutional identities and missions of Historically Black Institutions (HBIs). HBIs play a crucial role in promoting educational opportunities that highlight African American culture and history and foster a supportive environment for students from underrepresented backgrounds. In contrast, the USMH campus, located in Hagerstown, serves a rural and non-urban population, focusing on applied technical education to meet local workforce needs.

The program's technical and professional orientation, specifically targeting the rural workforce development in Western Maryland, aligns with the state's broader educational goals without encroaching on the culturally focused missions of HBIs. The FSU program at USMH enhances the diversity of educational opportunities in Maryland by filling a specific niche in applied computer science education, which is essential for the technological advancement and economic development of the region. This targeted approach ensures that the introduction of the program does not detract from the unique contributions of HBIs, instead enriching the state's higher education system by addressing distinct and underserved educational needs.

Section G: Adequacy of Curriculum Design, Program Modality, and Related Learning Outcomes

1. Program Establishment and Faculty Oversight

The new program has been established to address the specific needs of the Western Maryland region. The program design incorporates feedback from industry professionals and academic experts, ensuring its relevance and quality.

Faculty Oversight**:** The program will be managed by a dedicated team of faculty members with expertise in various aspects of computer science. Key faculty members include Dr. Michael B. Flinn, Dr. Xunyu Pan, Dr. Liangliang Xiao, Dr. Wenjuan Xu, Dr. Xinliang Zheng, Dr. Zhijiang Chen, Dr. Chung-Chi Huang, Dr. Nooh Bany Muhammad, Dr. Ying Zheng, Dr. Yuechen Chen, Ms. Rebecca Flinn, Mr. Steve Kennedy, and Ms. Mian Qian.

2. Educational Objectives and Learning Outcomes

Educational Objectives: The program aims to develop students' abilities to apply computing principles in real-world contexts, preparing them for careers in applied computer science and related fields.

Learning Outcomes:

- **Applied Computational Knowledge:** Students will demonstrate proficiency in core computational concepts, such as algorithms and software development, and apply this knowledge to solve complex, real-world problems.
- **Practical Problem Solving:** Graduates will demonstrate good skills in analyzing and designing computing solutions, implementing systems that meet specific needs and constraints.
- **Application of Theoretical and Practical Knowledge:** Students will integrate theoretical principles with practical skills, enabling them to analyze, design, and implement efficient computing solutions in various contexts.
- **Ethical and Professional Responsibilities:** Graduates will understand the professional, ethical, legal, security, and social issues and responsibilities related to the computing field. They will adhere to ethical standards in all professional activities.
- **Communication and Teamwork:** Students will develop effective communication skills, both written and oral, and will be able to function effectively in teams to accomplish shared goals.

3. Assessment and Documentation of Student Achievement

a) Assessment of Student Achievement: uses digital platforms to assess and document student achievement in the program. Canvas serves as the primary Learning Management System (LMS), supporting course content delivery, assignments, quizzes, and performance tracking. Microsoft Teams facilitates virtual classrooms and collaboration, while OneDrive and Office 365 enable cloud-based document storage and sharing for assignments and projects.

b) Documentation of Student Achievement: Grades and feedback are securely stored on Canvas, providing a comprehensive record of student progress. Performance analytics help instructors monitor engagement and outcomes, ensuring timely support. Regular assessment reports evaluate the curriculum's effectiveness and guide continuous improvement, maintaining alignment with program objectives. This system supports FSU's commitment to high-quality education in applied computer science.

4. Course List and Program Requirements

Requirements for Major in Applied Computer Science. Grand Total Credits: 73-74

1. **Core Courses** *(28 hours):*
   COSC101 - The Discipline of Computer Science (3)
   COSC102 - Foundations of Computer Science (4)
   SCIA120 - Introduction to Cybersecurity and Information Assurance (3)
   COSC240 - Computer Science I (4)
   COSC241 - Computer Science II (4)
   COSC300 - Structured Systems Analysis and Design (3)
   COSC440 - Database Management Systems (3)
   COSC460 - Operating Systems Concepts (3)
   COSC489 - Capstone Course (1)

2. **Required Advanced Courses** *(24 hours):*
   DTSC201 - Introduction to Data Analysis & Visualization (3)
   ITEC312 - Human-Computer Interaction (3)
   ITEC315 - Full Stack Development (3)
   COSC325 - Software Engineering (3)
   COSC331 - Fundamentals of Computer Networks (3)
   COSC455 - Artificial Intelligence (3)
   COSC456 – Applying Artificial Intelligence (3) (New Course)
   SCIA470 - Computer and Network Forensics I (3)

3. **Other Required Courses:**
   Mathematics *(9 – 10 hours):*
   Complete the following:
   MATH119 - College Algebra (3)
   MATH220 - Calculus for Applications I (3)
   Or
   MATH236 - Calculus I (4)
   Complete at least 1 of the following:
   MATH109 - Elements of Applied Probability and Statistics (3)
   MATH280 - Introductory Applied Statistics and Data Analysis (3)
   MATH380 - Introduction to Probability and Statistics (3)

   Other *(6 hours):*
   Complete at least 1 of the following:
   STCO 102 - Introduction to Strategic Communication Leadership (3)
   STCO 112 - Honors: Introduction to Strategic Communication Leadership (3)
   STCO 122 - Introduction to Public Communication (3)
   Complete the following:
   ENGL338 - Technical Writing (3)

4. **Electives** *(6 hours):*
   A minimum of 6 hours in at least two courses:
   Any 300 or 400 level Computer science courses

and/or
DTSC301 - Data Modeling, Wrangling, and Application (3)
ITEC442 - Electronic Commerce (3)
SCIA335 - Network Security (3)
SCIA370 - Security Policy and Assessment (3)
SCIA460 - Cloud Computing and Security (3)
SCIA471 - Computer and Network Forensics II (3)
SCIA472 - Hacking Exposed and Incident Response (3)
ITEC462 - Emerging Issues and Technologies (3)
ITEC480 - Project Management (3)

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5. General Education Requirements

General education requirements are met through a broad curriculum that includes courses in humanities, social sciences, natural sciences, and mathematics. These are completed (typically through a community college) prior to transfer into the program at USMH.

6. Specialized Accreditation and Certification

The program will seek relevant specialized accreditation to ensure it meets academic and industry standards.

7. Contracting with Other Institutions

The department has several transfer agreements with other institutes with many articulations of courses to ensure maximum transferability of our lower level courses. Current MOUs can be found here: https://www.frostburg.edu/admissions-and-cost/undergraduate/apply/transfer-students/transfer-agreements.php

In addition, a new MOU has been created with Hagerstown Community College and is ready to be reviewed and signed by the administrators on campus.

8. Information for Students

The combination of FSU's Electronic Catalog, Canvas (LMS), PAWS (SIS), website, admissions and recruiting materials, and student information system assures Frostburg State University students will be equipped with all necessary information to assure their time to graduation.

9. Advertising, Recruiting, and Admissions

All promotional materials for the program will accurately represent the educational offerings and services available, ensuring prospective students have a clear understanding of the program's scope and benefits. FSU is committed to transparency and honesty in all recruitment and admissions communications.

The Department of Computer Science and Information Technologies at Frostburg State University maintains several articulation agreements with community colleges across the state and region. These agreements ensure seamless transfer for students into our programs and are publicly accessible at the following link: Frostburg State University Transfer Agreements.

Of particular note:

- The agreement with Garrett College was recently updated in Spring 2024.
- The articulation agreement with Allegany College of Maryland is currently under review to ensure it remains current and reflects the most recent curriculum changes.

- A new agreement has been established with Hagerstown Community College, further strengthening our commitment to fostering pathways for community college students.

- We actively engage with ARTSYS, Maryland's Articulation System for Students, updating it with new information to ensure our transfer policies are transparent and aligned with current state policies and legal requirements. Additionally, we review coursework from other institutions regularly to ensure maximum transferability. To support this effort, we maintain an internal document that guides our department's efforts in maximizing credit transfer. This document is shared with the Admissions office to ensure clear communication with prospective transfer students.

- All agreements are, and will continue to be, made public on our University's website in accordance with MHEC guidelines.

Section I: Adequacy of Faculty Resources

1. Quality of Program Faculty

The faculty are distinguished by their academic qualifications, industry experience, and commitment to student success. Below is a summary list of the faculty members, including their appointment type, terminal degrees, academic titles, status, and the courses they are slated to teach within the program:

- **Dr. Michael B. Flinn**
  - **Appointment Type:** Full-time
  - **Terminal Degree:** D.Sc., Information Systems and Communications, Robert Morris University
  - **Academic Title/Rank:** Professor and Chair
  - **Courses:** Network Implementation, Software Engineering, Full Stack Development

- **Dr. Xunyu Pan**
  - **Appointment Type:** Full-time
  - **Terminal Degree:** Ph.D., Computer Science, State University of New York at Albany
  - **Academic Title/Rank:** Professor
  - **Courses:** Fundamentals of Computer Networks, Secure Computing, Cloud Computing and Security
- **Dr. Liangliang Xiao**
  - **Appointment Type:** Full-time
  - **Terminal Degree:** Ph.D., Computer Science, University of Texas at Dallas
  - **Academic Title/Rank:** Associate Professor
  - **Courses:** COSC 101 The Discipline of Computer Science, COSC444, COSC102

- **Dr. Wenjuan Xu**
  - **Appointment Type:** Full-time
  - **Terminal Degree:** Ph.D., Information Technology, University of North Carolina at Charlotte
  - **Academic Title/Rank:** Professor
  - **Courses:** Forensics, Network Security, Ethical Hacking

- **Dr. Xinliang Zheng**
  - **Appointment Type:** Full-time
  - **Terminal Degree:** Ph.D., Computer Science and Engineering, University of South Carolina
  - **Academic Title/Rank:** Professor
  - **Courses:** Computer Networks, Programming

- **Dr. Zhijiang Chen**
  - **Appointment Type:** Full-time
  - **Terminal Degree:** D.Sc., Information Technology, Towson University
  - **Academic Title/Rank:** Assistant Professor
  - **Courses:** Cybersecurity, AI/Machine Learning, Gaming

- **Dr. Chung-Chi Huang**
  - **Appointment Type:** Full-time
  - **Terminal Degree:** Ph.D., Information Systems and Applications, National Tsing Hua University
  - **Academic Title/Rank:** Associate Professor
  - **Courses:** Database Management Systems, Data Mining, Security in Computing

- **Dr. Nooh Bany Muhammad**

    - **Appointment Type:** Full-time
    - **Terminal Degree:** Ph.D., Computer Science, University of Southern Mississippi
    - **Academic Title/Rank:** Assistant Professor
    - **Courses:** Database Systems, Operating Systems, Information Systems

- **Dr. Ying Zheng**
    - **Appointment Type:** Full-time
    - **Terminal Degree:** D.Sc., Information Technology, Towson University
    - **Academic Title/Rank:** Associate Professor
    - **Courses:** Digital Logic, IOT, Python, Java Programming

- **Dr. Yuechen Chen**
    - **Appointment Type:** Full-time
    - **Terminal Degree:** Ph.D., Computer Engineering, The George Washington University
    - **Academic Title/Rank:** Assistant Professor
    - **Courses:** Computing, Machine Learning Algorithms

- **Rebecca Flinn**
    - **Appointment Type:** Full-time
    - **Terminal Degree:** M.S., Computer Science, Frostburg State University
    - **Academic Title/Rank:** Lecturer
    - **Courses:** COSC 101, COSC 102, Web Development, Knowledge Base Systems

- **Steve Kennedy**
    - **Appointment Type:** Full-time
    - **Terminal Degree:** M.S., Computer Science, Frostburg State University
    - **Academic Title/Rank:** Lecturer
    - **Courses:** Programming, Data Structures, Operating Systems

- **Mian Qian**
    - **Appointment Type:** Full-time
    - **Terminal Degree:** M.S., Computer Science, Towson University
    - **Academic Title/Rank:** Lecturer
    - **Courses:** Security policy, Project Managment, Ethics, COSC102

2. Ongoing Pedagogy Training for Faculty

FSU is committed to continuous professional development and training for faculty, ensuring that they remain current with educational best practices and technological advancements. The following initiatives support faculty development:

- **Center for Teaching Excellence:** This center offers regular training sessions and workshops focusing on evidence-based teaching practices, pedagogy, and the effective use of technology in the classroom.

- **Instructional Design and Technology Office:** Provides specialized training in the use of Canvas, the university's Learning Management System, and other digital tools to enhance online and hybrid and blended learning environments.
- **Annual Regional Conference on Teaching and Learning:** Hosted by FSU, this conference brings together educators to discuss innovative teaching strategies, share research, and explore new educational technologies.

- **Professional Development Courses:** Regularly offered courses and workshops provide faculty with opportunities to learn about the latest trends in instructional methods, assessment techniques, and distance education best practices.

These resources ensure that FSU's faculty are well-equipped to deliver high-quality education and effectively support student learning outcomes.

Section J: Adequacy of Library Resources

Since FSU is part of the University of Maryland system, we have access to a comprehensive range of widely used resources for the program available over the Internet with FSU network credentials. The Lewis J. Ort Library has consistently provided robust support for various programs at FSU and will continue to support the new program adequately. The library's extensive digital and print collections, including two primary databases the library has to support our CSIT programs, 1) ACM Digital Library and 2) Computers & Applied Sciences Complete, are more than sufficient to meet the needs of this program.

Section K: Adequacy of Physical Facilities, Infrastructure, and Instructional Equipment

1. Physical Facilities, Infrastructure, and Instructional Equipment

The Department of Computer Science and Information Technologies (CSIT) has ensured that the physical facilities, infrastructure, and instructional equipment are adequate to support the initiation and ongoing delivery of the new program. The department has access to multiple classroom spaces on the main campus, which can be remotely accessed in situations that require specialized computing power. This flexibility is supported by the CSIT NAS (Network-Attached Storage), which can be extended to students enrolled at the University System of Maryland at Hagerstown (USMH) or accessed remotely from anywhere in the world. The main campus and USMH campus are networked with a multigigabit connection r through the MDREN network, which will ensure timely exchange of images, data, and programs between the two locations, if necessary.

Under the direction of Dr. Jacob Ashby, several rooms on USMH campus have been identified for content delivery. These spaces are equipped with the necessary technology, including cameras and microphones (fixed or portable), to capture lectures, discussions, and labs, ensuring that instructional material is readily available to both in-person and remote students.

Additionally, discussions are underway regarding developing a new computer lab at USMH dedicated to this program. This lab may also serve as an esports arena, expected to attract prospective students and spark interest in the program. The potential for this dual-use space demonstrates a forward-thinking approach to engaging students in technology and gaming, further enhancing the program's appeal.

2. Support for Distance Education

FSU is committed to ensuring that both students and faculty engaged in distance education have access to essential technological resources. Specifically:

a) Institutional Electronic Mailing System: All students and faculty members have access to the institutional email system, which facilitates official communication, course-related discussions, and administrative processes.

b) Learning Management System (LMS): The university employs Canvas as its primary LMS, providing robust support for distance education.

c) Advanced Technological Infrastructure: To enhance remote delivery, FSU's facilities are equipped with camera and microphone arrays, enabling high-quality video and audio for live-streamed and recorded lectures, ensuring a seamless distance learning experience.

Section L. Adequacy of Financial Resources with Documentation

Table 1: Resources (Narrative)

All resource estimates are based on current rates without inflation.

1. Reallocated Funds

The program will be offered using current resources, with adjunct faculty teaching a total of 10 courses per year at a starting rate of $2,200 per course in Year 1, with a 3% annual increase in adjunct costs. In Year 3, a full-time faculty member will be hired with a starting salary of $93,000, reducing the adjunct course load to 4 courses per year. The full-time faculty salary is projected to increase to $98,664 by Year 5.

2. Tuition and Fee Revenue

Tuition and fee revenue calculations are based on new students enrolling in the Applied Computer Science program at USMH. In Year 1, we anticipate enrolling three full-time (FT) students, with an additional eight new FT students in Year 2, and so on. These calculations reflect annual revenue from new students without compounding for retention. Part-time (PT) students are also projected, with two new PT students enrolling each year. It is assumed that each PT student will enroll in two courses per semester, totaling 12 credit hours annually.

3. Grants, Contracts, and Other External Sources

N/A

4. Other Sources

N/A

TABLE 1: RESOURCES

Resource Categories	Year 1	Year 2	Year 3	Year 4	Year 5
1. Reallocated Funds	-	-	-	-	-
2. Tuition/Fee Revenue (c+g below)	29.058	89,982	156,246	237,516	324,736
a. Number of F/T Students In-state	3	7	14	21	31
a. Number of F/T Students Out-of-state	-	1	1	2	2
b. Annual Tuition/Fee Rate In-state	7,254	7,399	7,547	7,698	7,852
b. Annual Tuition/Fee Rate Out-of-state	22,848	23,305	23,771	24,246	24,731
c. Total F/T Revenue (a x b)	21,762	75,098	129,429	210,150	292,874
d. Number of P/T Students In-State	2	4	5	5	6
d. Number of P/T Students Out-of-State	-	-	1	1	1
e. Credit Hour Rate In-State	304	310	316	323	329
e. Credit Hour Rate Out-of-State	628	641	653	667	681
f. Annual Credit Hours	12	12	12	12	12

g. Total Part Time Revenue (d x e x f)	7,296	14,884	26,817	27,366	31,862
3. Grants, Contracts, & Other External Sources	-	-	-	-	-
4. Other Sources	-	-	-	-	-
TOTAL (Add 1 – 4)	29,058	89,982	156,246	237,516	324,736

Table 2: Expenditures (Narrative)

1. New Faculty (# FTE, Salary, and Benefits)

No new FTTT faculty are anticipated until year three of the program. However, there will be the need for several adjunct professors in the program to support the efforts of the current faculty in the department who will be supplementing instruction remotely and in person on the USMH campus. Please see projections in Table 2, below.

2. New Administrative Staff (# FTE, Salary, and Benefits)

None are anticipated at this time.

3. New Support Staff (# FTE, Salary, and Benefits)

None are anticipated at this time.

4. Equipment

No new equipment must be purchased directly by the department or the University. However, USMH is planning to equip a computer lab at the USMH facility with USMH funds.

5. Library

None are anticipated at this time.

6. New and/or Renovated Space

None anticipated at this time.

7. Other Expenses

None anticipated at this time.

TABLE 2: EXPENDITURES					
Expenditure Categories	Year 1	Year 2	Year 3	Year 4	Year 5
1. Total Faculty Expenses (b + c below)	23,960	24,679	145,886	150,262	154,770
a. # FTE	0.00	0.00	0.00	0.00	0.00
b. Total Salary	22,200	22,866	111,842	115,197	118,653
c. Total Benefits	1,760	1,813	34,044	35,065	36,117
2. Total Administrative Staff Expenses (b + c below)	-	-	-	-	-
a. # FTE	-	-	-	-	-
b. Total Salary	-	-	-	-	-
c. Total Benefits	-	-	-	-	-
3. Total Support Staff Expenses (b + c below)	-	-	-	-	-
a. # FTE	0.00	0.00	0.00	0.00	0.00
b. Total Salary	-	-	-	-	-
c. Total Benefits	-	-	-	-	-
4. Equipment	-	-	-	-	-
5. Library	-	-	-	-	-
6. New or Renovated Space	-	-	-	-	-
7. Other Expenses	-	-	-	-	-
TOTAL (Add 1 – 7)	23,960	24,679	145,886	150,262	154,770
	Year 1	Year 2	Year 3	Year 4	Year 5
Net revenue	5,098	65,303	10,361	87,253	169,966

ASSUMPTIONS:
4-5 Adjunct teaching a total of 10 courses a year (Adj I 2,200 per course in Year 1). Year 3 brings in a new FT Faculty member and reduces Adjunct courses to 4 a year. Adjunct course cost increases 3% annually. In-State/Out-of-State prorate provided by USMH. 2% increase annually on tuition.

Section M: Adequacy of Provisions for Evaluation of Program

1. Procedures for Evaluating Courses, Faculty, and Student Learning Outcomes:

Evaluation of Faculty: Student evaluations for each course are collected through FSU's learning management system, Canvas, using a standardized form. These evaluations include both quantitative scores and qualitative feedback, which are aggregated and provided to instructors to inform them about teaching effectiveness and areas for improvement.

Program Evaluation Cycle: In addition to course evaluations, FSU adheres to a regular program evaluation cycle mandated by the Maryland Higher Education

Commission (MHEC). This cycle ensures that the program's objectives, curriculum, and outcomes are systematically reviewed and assessed for continuous improvement and alignment with educational standards and industry needs.

Evaluation of Student Learning Outcomes: The assessment of student learning outcomes is managed through the Compliance Assist/Planning system, overseen by our department's assessment committee. This process uses direct measures like exams and projects, along with indirect measures such as surveys, ensuring alignment with the Institutional Effectiveness Cycle for continuous improvement.

1. How the Institution will evaluate the proposed program's educational effectiveness, including assessments of student learning outcomes, student retention, student and faculty satisfaction, and cost-effectiveness.

FSU will evaluate the program's effectiveness through a structured review process managed by the Office of Assessment and Institutional Research (AIR). This includes a capstone course as a key component for assessing student learning outcomes. Additionally, programs will submit a Program Review Self-Study, External Review Report, and Certificate, which evaluate student retention, satisfaction, and cost-effectiveness. These evaluations guide continuous improvements to maintain program quality and relevance.

Section N: Consistency with the State's Minority Student Achievement Goals

Frostburg State University is dedicated to fostering an inclusive and diverse campus environment, particularly at the University System of Maryland at Hagerstown, where the program will be offered. The program aligns with FSU's Core Value Statement, emphasizing the development of cultural competence and respect for diverse experiences. To support minority students, the program has established specific strategies, including targeted outreach and recruitment efforts, particularly in the Hagerstown region, and collaboration with local high schools and community colleges serving diverse populations.

FSU, including the USMH campus, provides comprehensive support services such as academic advising, tutoring, and mentoring designed to address the unique needs of minority students. The University Council on Diversity, Equity, and Inclusion (UCDEI), led by the University President, plays a crucial role in enhancing diversity among faculty, staff, and students at USMH. The program also encourages involvement in culturally diverse student organizations and activities, promoting an inclusive community where all students can thrive. This approach supports the educational success of minority students and enriches the overall learning environment at USMH.

Section O: Relationship to Low Productivity Programs Identified by the Commission

The proposed program does not relate to any low productivity programs identified by the Maryland Higher Education Commission (MHEC). Therefore, there will be no redistribution of resources from existing programs. Additionally, FSU has an internal process for monitoring and addressing low productivity programs, ensuring that resources are optimally allocated. The new program will utilize existing resources at the University System of Maryland at Hagerstown (USMH) and FSU, providing adequate support without impacting other programs.

Section P: Adequacy of Distance Education Programs

FSU is approved to offer distance education as an alternative delivery method included within its scope of accreditation, as evidenced in the university's MSCHE Statement of Accreditation Status. This program supports a face-to-face, blended, hybrid and online learning environment. FSU is an approved institutional member of the National Council of State Authorization Reciprocity Agreement (NC-SARA).

TOPIC: University of Maryland Eastern Shore Bachelor of Science (B.S.) in Electrical Engineering

COMMITTEE: Education Policy and Student Life and Safety

DATE OF COMMITTEE MEETING: April 3, 2025

SUMMARY: The University of Maryland Eastern Shore proposes establishing a Bachelor of Science in Electrical Engineering (BSEE) program. This program will prepare graduates for careers as electrical engineering professionals.

Electrical engineering is a broad field that influences numerous industries, including aerospace, telecommunications, artificial intelligence, and robotics. Electrical engineers design, develop, test, build, install, and maintain electrical equipment and systems. Common specialties within the field include power and energy systems, semiconductor and electronic component manufacturing, electromagnetic radio communications and networking, signal and image processing, and control engineering.

The program's curriculum includes core engineering courses, supporting science and math courses, major electives, and general education courses. It is designed to provide a strong foundation in traditional electrical engineering disciplines while also offering in-depth knowledge of electrical and electronics engineering principles, systems, and applications for real-world problem-solving. Our courses emphasize both experimental and analytical learning to develop a deep understanding of the field.

The 120-credit-hour curriculum will be divided among the following categories: 1) 39 credit hours in general education, 2) 51 credit hours of major core courses such as basic circuit theory, digital logic design, digital circuits and systems, analog and digital electronics, electromagnetic theory, signals and systems, computer organization, control theory, and senior design project, 3) 11 credit hours of electrical engineering electives, such as electronic circuit design lab, introduction to machine learning, artificial intelligence, digital signal processing, remote sensing and image processing, principles of wireless communications, robotics, and 4) 19 credit hours of supportive math and science courses.

ALTERNATIVE(S): The Regents may not approve the program or may request further information.

FISCAL IMPACT: No additional funds are required. The program can be supported by the projected tuition and fee revenue.

CHANCELLOR'S RECOMMENDATION: That the Education Policy and Student Life and Safety Committee recommend that the Board of Regents approve the University of Maryland Eastern Shore proposal to offer the Bachelor of Science (B.S.) in Electrical Engineering.

COMMITTEE RECOMMENDATION:	DATE:
BOARD ACTION:	DATE:
SUBMITTED BY: Alison M. Wrynn 301-445-1992	awrynn@usmd.edu

UNIVERSITY OF MARYLAND EASTERN SHORE
Office of the President

March 17, 2025

Dr. Jay Perman, Chancellor
University System of Maryland
701 E. Pratt St.
Baltimore, MD 21202

RE: Substantial Change Proposal (Bachelor of Science degree in Electrical Engineering)

Dear Chancellor Perman:

The University of Maryland Eastern Shore hereby submits a substantial change proposal to begin offering a Bachelor of Science degree in Electrical Engineering (BSEE) within the School of Business and Technology.

Consistent with its mission, UMES seeks to expand its capacity to offer unique and/or critical certificate and degree programs. As such, UMES has developed a Bachelor of Science in Electrical Engineering (BSEE). This new program will be established in the Department of Engineering and will complement the university's current undergraduate programs in Engineering. The proposed BSEE program aims to offer prospective students the opportunity to pursue a Bachelor of Science degree in electrical engineering and take the inside track to a career that combines engineering and technology and study the properties of electric and magnetic phenomena to the benefit of society.

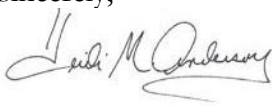
The proposed degree program will position UMES at the forefront of educational innovation in STEAM related academic programs. The proposed Electrical Engineering program will go beyond the current General Engineering (electrical specialization) program offered and will strengthen the workforce in the State of Maryland. It will also expand the pipeline of students entering the mainstream electrical engineering field. Electrical engineering remains in demand all over the world due to its versatile applications across various industries. The proposed BSEE program is expected to enable a stronger and multi-disciplinary research collaboration across the campus community, thus fueling research forward in many other disciplines beyond those created in applied science and engineering disciplines and creating a much broader impact on the Eastern Shore community as well as the State of Maryland.

The UMES campus is in Somerset County, Maryland. The BSEE will expand the educational opportunities for educationally disadvantaged students by developing a high-quality and innovative academic program that aligns with the educational needs of the region and the state of Maryland. The mission of the proposed program is to provide students and working professionals with advanced training in the discipline and to contribute to the economic development in the state of Maryland, especially in the Eastern Shore region where learning opportunities in advanced engineering disciplines are severely limited.

The attached proposal has undergone the established UMES curriculum approval process and I fully support the proposed program.

Thank you for your consideration.

Sincerely,



Heidi M. Anderson, Ph.D., FAPhA
President

Copy: Dr. Rondall Allen, Provost and Vice President for Academic Affairs
Dr. Derrek Dunn, Dean, School of Business and Technology
Dr. Yuanwei Jin, Department Chair, Department of Engineering

UNIVERSITY SYSTEM OF MARYLAND INSTITUTION PROPOSAL FOR

X	New Instructional Program
	Substantial Expansion/Major Modification
	Cooperative Degree Program
X	Within Existing Resources, or
	Requiring New Resources

University of Maryland Eastern Shore

Institution Submitting Proposal

Undergraduate Electrical Engineering

Title of Proposed Program

Bachelor of Science	Fall 2025
Award to be Offered	Projected Implementation Date
0909	14.1001
Proposed HEGIS Code	Proposed CIP Code
Department of Engineering	Leesa Thomas Banks
Department in which program will be located	Department Contact
410-651-7591	lpthomasbanks@umes.edu
Contact Phone Number	Contact E-Mail Address
	March 17, 2025
Signature of President or Designee	Date

Proposal for New Undergraduate Degree Program

Bachelor of Science in Electrical Engineering (BSEE)

A. Centrality to Institutional Mission Statement and Planning Priorities

1. Provide a description of the program, including each area of concentration (if applicable), and how it relates to the institution's approved mission.

The Department of Engineering and Aviation Sciences proposes to establish a Bachelor of Science degree in Electrical Engineering (BSEE) within the School of Business and Technology (SBT) at UMES. Electrical Engineering (EE) is a broad field that impacts many industries, including aerospace, telecommunications, artificial intelligence, and robotics. Electrical engineers design, develop, test, build, install, and maintain electrical equipment and systems. Some common specialties within electrical engineering include energy and power systems, semiconductor and electronic component manufacturing, research and development, signal processing, and control engineering. The proposed EE program aims to offer prospective students the educational opportunity to pursue a Bachelor of Science degree in electrical engineering and take the inside track to a career that combines engineering and technology to find ways to improve the quality of human life.

The curriculum of the program consists of core engineering courses, supportive science and math courses, and major electives, in addition to general education courses. This curriculum is designed to offer both a core understanding of traditional engineering disciplines, and an in-depth knowledge of the body. Our courses emphasize experimental and analytical coursework to gain a strong understanding of electrical and electronics engineering principles, systems, and applications for real-world problem solving.

The institutional mission of UMES, as an 1890 HBCU land-grant institution, is to promote distinctive learning, discovery and engagement opportunities in the arts and sciences, education, technology, engineering, agriculture, business and health professions. Central to this purpose is the guided interest in providing individuals, including first generation college students, access to a holistic learning environment that fosters multicultural diversity, academic success, and intellectual and social growth. The proposed program imbibes itself in this mission and it is guided by the opportunity to increase the graduation rate of the underrepresented minorities in the fields of electrical and electronics engineering.

2. Explain how the proposed program supports the institution's strategic goals and provide evidence that affirms it is an institutional priority.

The proposed BSEE program supports the institution's strategic goals. According to the UMES Strategic Plan 2023, (see the link https://wwwcp.umes.edu/president/strategic-plan/), we identified the following three goals under the 3 Priorities:

- Priority 1: Academic Excellence and Innovation: "Goal 1.1: Attract, retain, and graduate more aspiring students at the undergraduate and graduate levels"
- Priority 2: Access, Affordability, and Achievement: "Goal 2.1: Increase Enrollment".
- Priority 3: Workforce and Economic Development: "Goal 3.3 Diversify and strengthen Maryland's knowledge workforce by expanding the pipeline of underrepresented minority students entering critical workforce fields (STEAM, cyber, health care, education, social work, human services, technology)".

The proposed degree program will help the institution achieve its strategic goals listed above and position UMES to the forefront of educational innovation in STEAM related academic programs. The proposed Electrical Engineering program is to go beyond the current General Engineering (electrical specialization) program that we offer to students to diversify and strengthen the tech workforce for the State of Maryland and to expand the pipeline of underrepresented minority students entering the mainstream electrical and electronics engineering field characterized by industry. According to Bureau of Labor statistics, nationwide, overall employment of electrical and electronics engineers is projected to grow 5 percent from 2022 to 2032, faster than the average for all occupations. About 17,800 openings for electrical and electronics engineers are projected each year, on average, over the decade. Electrical engineers are in high demand and are essential to many industries, including transportation, healthcare, construction, robotics, aerospace, telecommunications, and artificial intelligence (AI), which are in short supply in the rural area of the Eastern Shore.

The proposed BSEE program is expected to enable a stronger and multi-disciplinary research collaboration across campus community, thus fueling research forward in many other different disciplines more than in applied science and engineering disciplines and creating a much broader impact on the entire campus as well as the Eastern Shore community.

3. Provide a brief narrative of how the proposed program will be adequately funded for at least the first five years of program implementation. (Additional related information is required in section L.)

With the commission of the Engineering and Aviation Science Complex, a $103 million investment from the state, the proposed program will be supported by about two dozen state-of-the-art engineering laboratories such as Robotics and Automation Lab, Micro-Electro-Mechanical Systems (MEMS) Lab with a class ISO 5 clean room, and Microwave Anechoic Chamber Lab, and Basic Circuit and Instrumentation Lab, etc. Two new engineering faculty members in EE were recruited to join the Department in Fall 2024, alongside the existing four faculty members in EE to support this proposed BSEE program. They will jointly develop courses and labs, deliver instruction, and establish vibrant research agendas in the field of EE. The new faculty lines will be funded by the HBCU settlement fund that UMES receives for the first five years of program implementation. By leveraging the existing BACHELOR OF SCIENCE in General Engineering

program, we anticipate adequate resources for faculty lines and laboratories for instruction and research in the field of EE to ensure success of this degree program.

4. **Provide a description of the institution's a commitment to:**
    a) **ongoing administrative, financial, and technical support of the proposed program**

The University Administration is committed to adequately funding this program and it has made this program one of the priority areas of extending the footprint of the institution. With the HBCU Lawsuit Settlement fund, UMES and the School of Business and Technology, and Department of Engineering and Aviation Sciences are equipped with the needed resources and are committed to supporting the program in every way, including ongoing administrative support, financial support, and technical support of the program.

    b) **continuation of the program for a period of time sufficient to allow enrolled students to complete the program.**

This degree program was created by leveraging, in part, the existing faculty and staff in the Departments of Engineering and Aviation Sciences at UMES, as well as the state-of-the-art engineering laboratories in the Engineering and Aviation Science Complex on UMES' campus. Two additional new full-time tenure-track faculty members with terminal degrees in the field of electrical engineering or a closely related field have been recruited to develop and deliver courses and labs for the program. The university is fully committed to continuing the proposed BSEE program for a sufficient period of time to allow enrolled students to complete the program.

B. Critical and Compelling Regional or Statewide Need as Identified in the State Plan

1. **Demonstrate demand and need for the program in terms of meeting present and future needs of the region and the State in general based on one or more of the following:**

    a) **The need for the advancement and evolution of knowledge**

Electrical engineers study electric and magnetic phenomena and exploit their unique and malleable properties to the benefit of society. Electrical engineers design, build, test, analyze, and document a full spectrum of simple to extremely complex electric and electronic devices, machines, systems, and sub-systems. There are many different sub-disciplines under the umbrella of electrical engineering. Individual sub-disciplines will determine the possible career path of electrical engineers. An abbreviated list of electrical engineering sub-disciplines includes electronic circuit and system design, microelectronics and semiconductors, electric power systems, transmission, distribution and maintenance, control systems, telecommunication systems, signal and image processing, optics and photonics devices and systems, instrumentation, embedded

hardware/software systems, automotive electric systems, aerospace electronics, and remote sensing.

The need for the advancement and evolution of electrical and electronics technology demands academic programs such as the proposed BSEE program to educate and produce next generation researchers and engineers to handle challenges in the next generation technology evolution.

b) Societal needs, including expanding educational opportunities and choices for minority and educationally disadvantaged students at institutions of higher education

UMES is located in Maryland's Somerset County, which is among the poorest counties in the state according to the U. S. Census Bureau. Lack of educational opportunities and choices for minority and educationally disadvantaged students calls for development of high-quality and innovative academic programming to align academic programs with the educational needs of the region and the state of Maryland.

UMES currently offers the Bachelor of Science in General Engineering degree program on the Eastern Shore of Maryland. Electrical specialization is one of the four specializations. In the past 17 years since inception of the engineering program, there have been more than 160 graduates. Most of these students joined the technical workforce in industry, such as Lockheed Martin, Northrup Grumman, ASML, John Deere, etc. Among those graduates, more than a dozen former graduates are working in the Wallops Island area for NASA and its contractors. About two dozen or more of them went on to pursue graduate degrees (master's and doctorate) in electrical engineering, mechanical engineering, or engineering science in other engineering schools, including Dartmouth College, Rensselaer Polytechnical Institute, University of Maryland, College Park, Old Dominion University, etc. The graduation and job placement data have demonstrated the success of the general engineering program at UMES.

However, the department has received feedback from graduates concerning their experiences while job seeking. Based on the feedback we received, we discovered that the nature of the General Engineering program, its name and the curriculum, may have hindered some from landing jobs in more technical areas as opposed to applicants who graduate with a mainstream degree such as Electrical Engineering. To be explicit, General Engineering (Electrical Specialization) is not the same as Electrical Engineering from the viewpoint of some of the employers. By establishing a BSEE degree program at UMES, we hope to remove the barrier for our graduates to entering the electrical and electronics engineering workforce. Furthermore, we have established a Master of Science in Electrical and Mechatronics Engineering (MSEME) degree at UMES. The proposed BSEE degree is expected to enable streamlined progression of our EE students to enroll in the MSEME program for graduate studies. We further anticipate the established BSEE program will

facilitate transfer students with associate degrees in electrical engineering from the community colleges in the State.

Electrical engineering provides the foundational technology for modern society—electronics for aircrafts and automobiles, electric vehicular technology, medical diagnostic and surgical systems, wireless technology for a connected world (and universe), and semiconductor chips for computing and artificial intelligence. The proposed electrical engineering program is expected to further enhance UMES's position as a top choice higher education institution for STEM education for minority and educationally disadvantaged students in the state and the surrounding regions with the goal of developing a pipeline of engineering and STEM workforce for the state.

c) The need to strengthen and expand the capacity of historically black institutions to provide high quality and unique educational programs

The proposed BSEE program will significantly strengthen and expand the capability of UMES, one of the four HBIs in the state, to provide high quality and unique educational experiences to students. In the state of Maryland, only Johns Hopkins University, University of Maryland, College Park, Morgan State University, and Capitol Technology University offer a Bachelor of Science in Electrical Engineering degree. However, all four institutions are located outside of the Eastern Shore region. The proposed BSEE program at UMES will increase the number of minorities with BSEE degrees in the fields of electrical and electronics engineering. It will also strengthen and expand the research capacity of UMES to provide high quality and unique educational programs.

2. Provide evidence that the perceived need is consistent with the Maryland State Plan for Postsecondary Education.

The proposed BSEE degree program is well aligned with the 2021-2025 Maryland State Plan for Postsecondary Education in all three areas: Access, Success, and Innovation.

Access – Ensure equitable access to affordable and quality postsecondary education for all Maryland residents.

The BSEE degree program is intended to prepare highly trained scientists and engineers at the undergraduate level in electronic circuit and system design, microelectronics and semiconductors, electric power systems, transmission, distribution, and maintenance, control systems, telecommunication systems, signal and image processing, optics and photonics devices and systems, instrumentation, embedded hardware/software systems, automotive electric systems, aerospace electronics, and remote sensing. The proposed BSEE degree program will provide equitable access and quality education to all Maryland residents, including those with disadvantaged backgrounds, to develop a strong electrical engineering workforce for the state.

Success – Promote and implement practices and policies that will ensure student success.

The practices and policies concerning the proposed BSEE degree program align with all the existing policies at the University, which will ensure student success. By providing a carefully developed curriculum, sufficient engineering laboratory facilities, equipment, and adequate faculty members for advising and teaching, the proposed degree program will help ensure student graduation and successful job placement.

Innovation – Foster innovation in all aspects of Maryland higher education to improve access and student success

Specifically, the proposed BSEE degree program aligns with the goal of "Innovation" of the State Plan, which aims to "foster innovation in all aspects of Maryland higher education to improve access and student success". The proposed program will help achieve the goal of "Economic Growth and Vitality", which is centered on supporting a knowledge-based economy through increased education and training and is to ensure that Historically Black Institutions are "competitive, both in terms of program and infrastructure", with Maryland's other state institutions. Ultimately, the proposed degree program will prepare highly qualified scientists and engineers to contribute to the economic growth and vitality of Maryland by providing them new knowledge and skillsets in emerging technologies so they can maintain the skills they need to succeed in the workforce.

C. Quantifiable and Reliable Evidence and Documentation of Market Supply and Demand in the Region and State

1. Describe potential industry or industries, employment opportunities, and expected level of entry (*ex: mid-level management*) for graduates of the proposed program.

A BSEE degree opens a plethora of opportunities across a broad spectrum of industries. Electrical engineers are sought after in diverse sectors such as energy, telecommunications, manufacturing, defense, aerospace, automotive, and many more. This diversity of industries allows electrical engineers to apply their skills in various contexts, from designing smart grids for power distribution, to developing systems for autonomous vehicles, to crafting intricate circuit designs for advanced communication systems. Engineers often must solve complex problems, so an electrical engineer must be adept at creating, evaluating, and implementing solutions. Innovation in this area of engineering will no doubt continue in accordance with the development of technology. The proposed BSEE program will produce graduates in all technical fields, including as entry level engineers or engineering managers.

2. Present data and analysis projecting market demand and the availability of openings in a job market to be served by the new program.

The 2023 median pay for electrical engineers is $109,010 per year, and the median annual wage for electronics engineers, except computer was $119,200 in May 2023. Data by BLS (https://www.bls.gov/ooh/architecture-and-engineering/electrical-and-electronics-

engineers.htm) shows that overall employment of electrical and electronics engineers is projected to grow 5 percent from 2022 to 2032, faster than the average for all occupations. About 17,800 openings for electrical and electronics engineers are projected each year, on average, over the decade. Many of those openings are expected to result from the need to replace workers who transfer to different occupations or exit the labor force, such as to retire.

A recent study on the job market for electrical engineers in the US (https://www.careerexplorer.com/careers/electrical-engineer/job-market/) shows that Maryland employed 4550 electrical engineers in the industry, ranked 13th in the nation. This shows that Maryland has the potential to further increase the number of employment opportunities in electrical and electronics engineering field. The BLS predicts that most opportunities for electrical and electronics engineers will be with engineering service firms, as companies seek to reduce costs by contracting. Electrical engineers familiar with developing technologies in the areas of solar arrays, semiconductors, and communications will be best positioned to find jobs.

Moreover, according to Occupational Information Network, i.e., O-Net Online, (https://www.onetonline.org/link/summary/17-2071.00), job titles suitable for graduates of the electrical engineering program vary, such as Circuits Engineer, Design Engineer, Electrical Controls Engineer, Electrical Design Engineer, Electrical Engineer, Electrical Project Engineer, Engineer, Instrumentation and Electrical Reliability Engineer (I&E Reliability Engineer), Project Engineer, Test Engineer. Their focuses are on research, design, development, testing, or supervision of the manufacturing and installation of electrical equipment, components, or systems for commercial, industrial, military, or scientific use. Among those position titles, Industries with the highest concentration of employment in Electrical Engineers are listed in the table below: (https://www.bls.gov/oes/current/oes172071.htm)

Industry	Employment	Annual Mean Wage
Electric Power Generation, Transmission and Distribution	17,870	$115,480
Electrical Equipment Manufacturing	4,810	$96,850
Audio and Video Equipment Manufacturing	610	$122,340
Communications Equipment Manufacturing	2,370	$126,850
Navigational, Measuring, Electromedical, and Control Instruments Manufacturing	10,890	$123,780

Finally, the Maryland Occupational Projections - Workforce Information and Performance has updated the projections of engineering jobs during the ten-year period of 2022-2032. It is anticipated that there will be an 8.43% increase of occupation in Architecture and Engineering in the state of Maryland. The proposed BSEE program will help meet the demand of the engineering workforce.

3. **Discuss and provide evidence of market surveys that clearly provide quantifiable and reliable data on the educational and training needs and the anticipated number of vacancies expected over the next 5 years.**

The employment data from the Bureau of Labor Statistics (BLS) is typically used to determine market demand. Data by BLS (https://www.bls.gov/ooh/architecture-and-engineering/electrical-and-electronics-engineers.htm) shows that overall employment of electrical and electronics engineers is projected to grow 5 percent from 2022 to 2032, faster than the average for all occupations. And about 17,800 openings for electrical and electronics engineers are projected each year, on average, over the decade. These openings are to be filled by those with educational and training background in the field of electrical engineering.

The career outlook for electrical engineers is strong. Industry data shows (https://www.recruiter.com/careers/electrical-engineers/outlook/) vacancies for this career have increased by 24.89 percent nationwide in that time, with an average growth of 1.56 percent per year. Demand for Electrical Engineers is expected to go up, with an expected 16,880 new jobs filled by 2029. This represents an annual increase of 1.01 percent over the next few years.

4. **Provide data showing the current and projected supply of prospective graduates.**

Similar electrical engineering Bachelor of Science programs that are offered by HBCUs in the region include: The University of District of Columbia, Morgan State University, and Howard University. In the State of Maryland, four institutions offer BSEE degrees, including The Johns Hopkins University, Morgan State University, University of Maryland, College Park and The Capitol Technology University. Based upon data available to the public, the number of degrees awarded in BSEE in the four Maryland institutions and other HBCUs in the region is summarized below:

Institutions	**# of EE BS Degree Awarded (recent)**
Morgan State University	46 (Spring 2023)
Johns Hopkins University	21 (2022-2023)
University of Maryland	100 (2022-2023)
Capitol Technology University	N/A
University of District of Columbia	11 (2022-2023)
Howard University	14 (2022-2023)

The data shows that the number of awarded Bachelor of Science degrees in electrical engineering from HBCU is still low. UMES is in a good position to address the shortage of

HBCU graduates of a BSEE program. The four institutions in the state are more than 130 miles away from the UMES campus, which is on the Eastern Shore of Maryland. UMES is thus uniquely positioned to address this need within the State of Maryland. It is our belief that the market demand is sufficiently high, the geographic draw of students is sufficiently distinct and the proposed BSEE program to be offered on the Eastern Shore of the state, along with other similar programs in the state (e.g., JHU's BSEE, UMD's BSEE, and Morgan State University's BSEE) will provide valuable contributions to the Maryland workforce.

D. Reasonableness of Program Duplication

1. **Identify similar programs in the State and/or same geographical area. Discuss similarities and differences between the proposed program and others in the same degree to be awarded.**

   The proposed program is unique and building upon the existing faculty expertise in the general engineering program at UMES. There is no other electrical engineering degree program on the Eastern Shore of Maryland. Although other institutions in Maryland, such as University of Maryland, College Park, Morgan State University, Capitol Technology University, and the Johns Hopkins University offer a BSEE degree program, these institutions are located about 130 miles away from the Eastern Shore. UMES serves a different geographical area compared with other parts or regions of the state. Moreover, the proposed program offers a unique curriculum with a focus in electronics, circuit design, artificial intelligence in which technical talents and workforce is seriously lacking, especially on the rural eastern shore of the state. The proposed UMES BSEE program supplements other BSEE programs offered in the state.

2. **Provide justification for the proposed program**

   Electrical engineers are in high demand and are essential to many industries, including transportation, healthcare, construction, robotics, aerospace, telecommunications, and artificial intelligence (AI). They design, develop, build, test, and maintain electrical systems and equipment, such as electric motors, radar and navigation systems, communications systems, and power generation equipment. They also design electrical systems for automobiles and aircraft.

   Most recently, the global competition for chips manufacturing makes is a pressing issue for demand of electrical engineers. Developing new ways of making microchips is one of the jobs that electrical engineers perform. The CHIPS and Science Act, that was recently approved in 2022, is aimed at kick-starting chip manufacturing in the United States with an investment of $50 billion. Exciting as this is for the US economy, the potential problem is evident: there is a severe shortage of qualified workforce needed to run the chip manufacturing plants and design the chips they will make.

Engineering schools in the United States are now racing to produce that talent. There were around 20,000 job openings in the semiconductor industry at the end of 2022, according to the recent article of IEEE Spectrum (https://spectrum.ieee.org/chips-act-workforce-development), which states that "Even if there's limited growth in this field, you'd need a minimum of 50,000 more hires in the next five years. We need to ramp up our efforts quickly."

UMES, as a part of the national research community, will collaborate with other HBCUs in the race to produce a qualified technical workforce. The proposed BSEE program goes beyond the existing General Engineering (Electrical Specialization) that enables our graduates to enter the mainstream Electrical Engineers workforce by removing the barrier that may be caused by the limitations of the General Engineering with Electrical Specialization. The BSEE program we propose will enable electrical engineering students to obtain both foundational and practical knowledge in various aspects of electrical and electronic system design and testing. As we can imagine, BSEE graduates of UMES, will play a pivotal role in bridging the diversity gap within the engineering landscape while fostering a generation of talented, diverse and innovative engineers poised to shape the future of industries in the region, the state of Maryland, and worldwide.

E. Relevance to High-demand Programs at Historically Black Institutions (HBIs)

1. Discuss the program's potential impact on the implementation or maintenance of high-demand programs at HBI's.

Engineering programs with various sub-disciplines have always been in high demand on the employment spectrum. Only three HBCUs (Morgan State, Howard University, and University of District of Columbia) in the region offer electrical engineering programs at the baccalaureate level. And UMES is more than 160 miles away from these institutions. The proposed BSEE program at UMES, if established, will position UMES as a center for electrical and electronics technology education and research in the rural area of Eastern Shore. The program will enable UMES to produce a high caliber workforce in electrical engineering to support the aviation and aerospace industry, as well as the field of artificial intelligence, and chip manufacturing and design.

F. Relevance to the identity of Historically Black Institutions (HBIs)

1. Discuss the program's potential impact on the uniqueness and institutional identities and missions of HBIs.

UMES has envisioned a strong presence in education and innovation in the STEAM field, and engineering is one of the focus areas. The proposed BSEE program at UMES, if established, will strengthen the position of UMES as a center for engineering education and research in the rural area of the Eastern Shore, and thus reaffirming the mission of UMES as an 1890 land-grant institution. The program will enable UMES to produce a high caliber workforce in electrical and electronics engineering to support the high demand tech workforce in the region and the state.

G. Adequacy of Curriculum Design, Program Modality, and Related Learning Outcomes (as outlined in COMAR 13B.02.03.10):

1. Describe how the proposed program was established, and also describe the faculty who will oversee the program.

Curriculum Design: The proposed program was established through a rigorous review of unmet needs by the institution. It started from the faculty in the engineering program, with approval from the Departmental Curriculum Committee, School Curriculum Committee, Graduate Faculty Council, Senate Curriculum Committee, etc. The curriculum was developed by the faculty in the Department of Engineering and Aviation Sciences.

Faculty Oversight: The courses of the curriculum in the proposed BSEE Bachelor of Science degree program will be taught by faculty in the Department of Engineering and Aviation Sciences, with Two (2) new full-time tenure-track faculty members with Ph.D. degrees in the electrical engineering fields. The two new faculty will develop courses and labs and deliver teaching and research in the electrical engineering field. In addition, the existing faculty in the department will also help with the BSEE because a significant number of courses in the core and elective of the BSEE curriculum are cross-listed in the courses in the existing General Engineering Program curriculum. This arrangement ensures the new BSEE program is fully supported in terms of faculty resources. Please view the detailed list of faculty backgrounds in EE in the current engineering program discussed later in this proposal.

Program Modality: The program will be offered at the main campus of UMES.

2. Describe educational objectives and learning outcomes appropriate to the rigor, breadth, and (modality) of the program.

To ensure the curriculum of the BSEE program reflects the rigor and highest standards appropriate to the electrical engineering field, we will seek and maintain accreditation from the Engineering Accreditation Commission (EAC) of ABET, https://www.abet.org, under the commission's General Criteria and the Program Criteria for Electrical Engineering for this BSEE program.

The educational objectives of the curriculum of the proposed BSEE program are to enable graduates of the program to develop ability of:

- Contributing to solutions of engineering problems by applying their technical knowledge, their experience with modern industry tools, and their understanding of the impact that engineering can have on global, societal, and environmental issues.
- Assuming project/product management and team leadership roles in their organizations.
- Demonstrating growth in careers related to electrical engineering and becoming productive engineers and/or pursuing graduate studies
- Contributing to society through involvement in professional and/or service activities.

The learning outcomes of the program align with the learning outcomes of the ABET (1)-(7) specified by the Engineering Accreditation Commission (EAC).

- [1]. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
- [2]. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economics factors.
- [3]. An ability to communicate effectively with a range of audiences.
- [4]. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.
- [5]. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.
- [6]. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.
- [7]. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

Students will learn analytical and experimental methods that are broadly applicable in the field of engineering. They will also be given specific instruction and hands-on laboratory experimental leaning experiences on how to apply these methods to a large range of problems in biomedical engineering.

3. Explain how the institution will:

a) provide for assessment of student achievement of learning outcomes in the program

Assessment Methods based on established departmental standards will include the following:

- Assessing written and oral student presentations, written assignments and research projects.
- Evaluating student performance in exams, quizzes and assignments in required major courses.
- Assessing comprehensive senior design project report in the two tracks of the program.

b) document student achievement of learning outcomes in the program

The department will document student achievement of the learning outcomes in the program in the same fashion as its current accredited engineering undergraduate program periodically. Assessment of learning outcomes will be conducted every six years per ABET accreditation requirements.

4. **Provide a list of courses with title, semester credit hours and course descriptions, along with a description of program requirements**

The Electrical Engineering Bachelor of Science program consists of **120** total credit hours. The number of credits is determined based upon the MHEC requirement for a BACHELOR OF SCIENCE degree and a survey of credit requirement for similar electrical engineering programs in the region. The curricula include 28 credit hours of general education courses in English, arts and humanities, social and behavioral sciences, and institution specific courses. An additional 11 credits in mathematics and physical sciences are required under the General Education program, which are included as a part of the requirements for the Electrical Engineering major. This makes the total credits for General Education to be 39 credit hours. The Electrical Engineering curriculum also requires 19 credits of supportive math and physics courses. Students take 51 credit hours of core electrical engineering courses. Students choose 11 credit hours of elective courses. The program is on a semester basis. The total number of credits and their distribution is given as follows:

	Category	***Distribution***
I.	General Education Courses	39 credit hours
II.	Supportive Math & Science Courses	19 credit hours
III.	Electrical Core Courses	51 credit hours
IV.	Elective Courses	11 credit hours

Electrical Engineering Core Requirement		**51 credits needed**
Course Code	**Course Title**	**Credit Hours**
ENGE 150	Freshmen Engineering Design	3 hrs
ENGE 170	Programming Concepts for Engineers	3 hrs
ENGE 240	Basic Circuit Theory	3 hrs
ENGE 241	Analog Circuit Lab	1 hrs
ENGE 250	Digital Logic Design	3 hrs
ENGE 251	Digital Logic Design Lab	1 hrs
ENEE 222*	Elements of Discrete Signal Analysis	3 hrs
ENEE 354*	Digital Circuits and Systems Design	3 hrs

ENGE 320	Statistics and Probability for Engineers	3 hrs
ENGE 340	Analog and Digital Electronics	3 hrs
ENGE 341	Analog and Digital Electronics Lab	1 hrs
ENGE 370	Computational Methods in Engineering	3 hrs
ENEE 330	Signals and Systems	3 hrs
ENEE 348	Electromagnetic Theory	3 hrs
ENGE 382	Control Systems	3 hrs
ENGE 383	Control Lab	1 hrs
ENEE 301*	Introduction to Device Physics	3 hrs
ENCE 350	Computer Organization	3 hrs
ENGE 475	Engineering Seminar	1 hrs
ENGE 476	Senior Design Project I	2 hrs
ENGE 477	Senior Design Project II	2 hrs

Electrical Engineering Elective		**11 credits needed**
Course Code	**Course Title**	**Credit Hours**
ENEE 450*	Electronic Circuit Design Lab	2 hrs
ENEE 385	Power Electronics	3 hrs
ENEE 448*	Electromagnetic Wave Propagation	3 hrs
ENEE 387	Simulation and Virtual Reality	3 hrs
ENEE 422	Introduction to Machine Learning	3 hrs
ENEE 444	Communication Design Lab	2 hrs
ENEE 452	Artificial Intelligence	3 hrs
ENEE 372	Computer Networks	3 hrs
ENEE 304*	Introduction to Micro and Nanoelectronics	3 hrs
ENCE 458	VLSI	3 hrs
ENEE 460	Digital Signal Processing	3 hrs
ENEE 465	Remote Sensing and Image Processing	3 hrs
ENEE 464	Embedded System Design Lab	2 hrs
ENEE 468	Robotics	3 hrs

ENEE 469	Robotics & Automation Design Lab	2 hrs
ENEE 472	Selected Topics in Engineering	3 hrs
ENEE 490*	Principle of Wireless Communications	3 hrs
ENCE 454	Computer System Architecture	3 hrs
ENCE 352	Microprocessors and Microcomputers	3 hrs
ENCE 465	Microprocessor Design Lab	2 hrs

Supportive Science & Math Requirement		**19 credits needed**
Course Code	**Course Title**	**Credit Hours**
MATH 211	Calculus II	4 hrs
MATH 212	Calculus III	4 hrs
MATH 241	Differential Equation for Engineers	3 hrs
PHYS 262	General Physics II	3 hrs
PHYS 264	Genera Physics II Lab	1 hrs
PHYS 263	General Physics III	3 hrs
PHYS 265	General Physics III Lab	1 hrs

Note: ENEE 222, ENEE 301, and ENEE 354 are new courses introduced to the major core of the BSEE curriculum, and ENEE 304, ENEE 448, ENEE 458 and ENEE 490 are new courses introduced to the electives of the BSEE curriculum. The rest of the course are in the existing Bachelor of Science general engineering curriculum. This arrangement enables the existing engineering faculty to contribute to course offering to the proposed BSEE program.

5. Discuss how general education requirements will be met, if applicable.

Students in the electrical engineering program will take a total of 39 credits of General Education courses. This includes 28 credit hours of general education courses in English, arts and humanities, social and behavioral sciences, and institution-specific courses, including First-Year Experience, Computer Literacy, and JEDI (Justice, Equity, Diversity, Inclusion). An additional 7 credits in biological and physical sciences and 4 credits in mathematics (Calculus I) are also required for the program. The total number of General Education credits (39) and the composition of the General Education courses meet the requirements of the university General Education program and the engineering program curriculum.

6. **Identify any specialized accreditation or graduate certification requirements for this program and its students.**

As with the current undergraduate General Engineering degree program at UMES, we will seek to have the proposed Electrical Engineering program accredited by the Accreditation Board of Engineering and Technology (ABET). The criteria for accrediting an Electrical Engineering program are stipulated in two areas [Link to ABET Criteria]:

A. **I. General Criteria for Baccalaureate Level Programs, Criteria 5 Curriculum,** and

B. **III. Program Criteria for Electrical, Computer, Communications, Telecommunication(s) and Similarly Named Engineering Programs**

Under ABET's **Criteria 5 Curriculum**, "The curriculum must include experience in:

> one year of a combination of college level mathematics and basic sciences (some with experimental experience) appropriate to the discipline. Basic sciences are defined as biological, chemical, and physical sciences.
>
> One and one-half years of engineering topics, consisting of engineering sciences and engineering design appropriate to the student's field of study. Engineering sciences have their roots in mathematics and basic sciences but carry knowledge further toward creative application. These studies provide a bridge between mathematics and basic sciences on the one hand and engineering practice on the other. Engineering design is the process of devising a system, component, or process to meet desired needs. It is a decision-making process (often iterative), in which the basic sciences, mathematics, and engineering sciences are applied to convert resources optimally to meet these stated needs.

Under ABET's **Program Criteria for Electrical Engineering**, "The curriculum must include:

> probability and statistics, including applications appropriate to the program name; mathematics through differential and integral calculus; sciences (defined as biological, chemical, or physical science); and engineering topics (including computing science) necessary to analyze and design complex electrical and electronic devices, software, and systems containing hardware and software components.
>
> The curriculum for programs containing the modifier "electrical," "electronic(s)," "communication(s)," or "telecommunication(s)" in the title must include advanced mathematics, such as differential equations, linear algebra, complex variables, and discrete mathematics.

Here we provide an analysis of the proposed credits in each of the categories for the curriculum.

Category		Distribution	Explanation
I.	General Education	39 credit hours	This section includes credits of basic science and math courses, in particular, Chemistry (or Biology), Physics 1/Lab, and Calculus 1.
II.	Supportive Math and Sciences	19 credit hours	This section includes 19 credits in Math and Physics that go beyond those in the Gen Ed section. Per ABET accreditation, 30 credits of science and math are required.
III.	Engineering Core Courses	51 credit hours	This section includes core and major elective courses in the electrical engineering program. Per ABET accreditation, 45 credits for engineering courses are required.
IV.	Elective Courses	11 credit hours	
	TOTAL	**120**	

7. **If contracting with another institution or non-collegiate organization, provide a copy of the written contract.**

No other institution or non-collegiate organization is required to offer this degree program.

8. **Provide assurance and any appropriate evidence that the proposed program will provide students with clear, complete, and timely information on the curriculum, course and degree requirements, nature of faculty/student interaction, assumptions about technology competence and skills, technical equipment requirements, learning management system, availability of academic support services and financial aid resources, and costs and payment policies.**

The entire curriculum and course specific information of the proposed degree program will be posted on the Department of Engineering and Aviation Science website:www.umes.edu/engavi. Information pertaining to the availability of academic/student support services, financial aid resources and tuition payment policies can be found on the webpages of the UMES Office of Admissions and the Office of Financial Aid.

9. **Provide assurance and any appropriate evidence that advertising, recruiting, and admissions materials will clearly and accurately represent the proposed program and the services available.**

The program will be advertised alongside other academic undergraduate programs within the School of Business and Technology of UMES. Proper venues include Public Radio WESM 91.3, and social media such as UMES Facebook page, the University Key, as well as UMES alumni association, and other professional societies. The Department has a tradition of strong outreach program. For example, the Department has hosted in the past three years the "National Engineer's Week" (in the month of February each year) celebration for high schools from the local counties, such as Wicomico County, Somerset County, etc. Faculty from different disciplines in engineering developed hands-on activities to enable high schools to have firsthand exposure to different engineering disciplines. We will continue this engagement as an effort of advertising, recruiting and promoting engineering education.

H. Adequacy of Articulation

1. If applicable, discuss how the program supports articulation with programs at partner institutions. Provide all relevant articulation agreements.

This is a new program to be established at UMES home campus. UMES has existing articulation agreements with community colleges in the state, such as Wor-Wic Community College, and high schools. We will leverage the existing partnerships to develop, when appropriate, new articulation agreements with high schools in the local counties and community colleges for the proposed BME program.

I. Adequacy of Faculty Resources (as outlined in COMAR 13B.02.03.11).

1. Provide a brief narrative demonstrating the quality of program faculty. Include a summary list of **faculty with appointment type, terminal degree title and field, academic title/rank, status (full-time, part-time, adjunct) and the course(s) each faulty member will teach in the proposed program.**

Two (2) new faculty lines in EE have been allocated to support the proposed BSEE degree program by the HBCU settlement fund. Furthermore, the existing faculty in the engineering program will also be able to provide needed expertise to support partially the teaching of courses when necessary. In addition, there are four (4) full-time engineering faculty qualified to teach the EE courses cross-listed in the proposed BSEE curriculum and the existing general engineering curriculum.

Existing four (4) faculty and the two (2) new faculty, all in EE are listed below:

Dr. Yuanwei Jin, Professor and Chair. He received Ph.D. degree in Electrical Engineering from the University of California at Davis. He was with Carnegie Mellon University before joining UMES. His research interests are in the general area of signal processing and sensor array processing, with applications in medical imaging, communications, radar/sonar, and networks.

Dr. Ibibia K. Dabipi, **Professor**. He received his Ph.D. and M.S. in Electrical Engineering from Louisiana State University. His experiences include working at Bell Communications Research and AT&T Bell Labs as a member of technical staff with primary research focus in communications and networks.

Dr. Alvernon Walker, Associate Professor. He received his Ph.D. in Electrical Engineering from North Carolina State University. His primary research area is electronics, digital system design and mixed-signal system design.

Dr. Lei Zhang, Associate Professor. He received his Ph.D. in Electrical Engineering from the University of Nevada, Las Vegas. His primary research area is in computer networks, microprocessor and microcomputers, and embedded system design.

Dr. Liang Zhang, **Assistant Professor** (joined UMES in Fall 2024). He received his Ph.D. degree in Electrical Engineering from New Jersey Institute of Technology. His primary research interests include machine learning, mobile edge computing and airborne networks, wireless communications and UAV communications, wireless virtual reality, caching, and energy optimization.

Dr. Zeenat Afroze, **Assistant Professor** (joined UMES in Fall 2024). She received her Ph.D. degree in Electrical Engineering from the University of South Carolina. Her primary research interests include next generation wireless communications, signal processing, and channel modeling.

To further demonstrate the qualification and the role of the faculty in delivering the instructions of the BSEE program, we list the individual faculty members and the major courses (code with EECE) that align with their expertise:

EE/CE Major or Elective Courses	**Dabipi**	**Walker**	**Lei Zhang**	**Liang Zhang**	**Afroze**	**Jin**
ENEE 330	X			X	X	X
ENEE 348				X	X	X
ENEE 222	X			X	X	X
ENEE 354		X		X	X	
ENEE 301		X			X	
ENEE 462				X	X	X
ENEE 443	X			X		
ENEE 450		X			X	
ENEE 385		X			X	
ENEE 448					X	X
ENEE 387			X	X	X	

ENEE 422				X		X
ENEE 444	X			X	X	
ENEE 452			X	X		
ENEE 372			X	X		
ENCE 350		X	X			
ENCE 458		X	X			
ENEE 460				X	X	X
ENEE 465					X	X
ENEE 464					X	X
ENEE 468			X	X	X	X
ENEE 469			X	X	X	
ENEE 490	X			X	X	
ENCE 454		X	X			
ENCE 465		X	X			
ENCE 352		X	X		X	

2. **Demonstrate how the institution will provide ongoing pedagogy training for faculty in evidenced-based best practices, including training in:**

    a) **Pedagogy that meets the needs of the students**

    b) **The learning management system**

(a) and (b): Faculty support for the development and instruction of courses is provided by the Center for Teaching Excellence at UMES. The department also supports faculty professional development for attending conferences such as IEEE (Institute of Electrical and Electronics Engineering), ASEE (American Society of Engineering Education) for pedagogy training in engineering education, as well as ABET Symposium for continuous improvement.

Canvas LMS is the current learning management system utilized by UMES throughout the campus. Canvas represents an important development in improving the student experience at UMES, providing valuable new tools for our faculty and supporting students in an impressive digital environment. For faculty, the Center for Instructional Technology & Online Learning (CITOL) https://wwwcp.umes.edu/citol/ supports the development, design, and delivery of online and hybrid programs, classes, and workshops with a focus on flexibility, resiliency, equity, accessibility, privacy, and safety (FREAPS). CITOL assists faculty, staff, and students in all aspects of digital teaching and learning concerning pedagogy and technology. This includes the

use of the Canvas Learning Management System, Echo360, Google Workspace, Respondus 4.0, and Respondus LockDown Browser.

c) Evidenced-based best practices for distance education, if distance education is offered.

Not applicable.

J. Adequacy of Library Resources (as outlined in COMAR 13B.02.03.12)**.**

1. **Describe the library resources available and/or the measures to be taken to ensure resources are adequate to support the proposed program.**

The University assures that institutional library resources meet the new program needs. For the proposed degree program, typically library resources include textbooks, reference books and technical papers. Although UMES does not have the IEEE Xplore Digital Library, the technical papers could be accessed through the Inter-Library Loan (ILL) services.

K. Adequacy of Physical Facilities, Infrastructure and Instructional Equipment (as outlined **in COMAR 13B.02.03.13)**

1. **Provide an assurance that physical facilities, infrastructure and instruction equipment are adequate to initiate the program, particularly as related to spaces for classrooms, staff and faculty offices, and laboratories for studies in the technologies and sciences.**

The UMES department of Engineering and Aviation Sciences is housed in the Engineering and Aviation Science Complex, a 166,000 square feet facility that houses more than 20 engineering laboratories. They include Robotics Lab, Fluid/Thermal lab, Materials lab, Aerospace lab, Electronics Lab, Circuits Lab, Micro-Electro-Mechanical Systems (MEMS) Lab with a Clean Room (ISO Class 5, 6 and 7), Control System Lab, and Embedded System Lab, Communications Lab, Microwave Chamber, CAD/VLSI Lab, High Bay Area, and Multiple Computer Labs, etc. These labs can support majority of the activities in the new courses and research activities. A complete list of engineering labs with brief descriptions is shown by the link:

https://wwwcp.umes.edu/engineering/engineering-laboratories/

All engineering faculty and staff have individual offices that will facilitate student advising, office hours, etc. Sufficient classrooms are available also in the same building, which make it very convenient for students to take classes and conduct laboratory experiments.

2. **Provide assurance and any appropriate evidence that the institution will ensure students enrolled in and faculty teaching in distance education will have adequate access to:**

    a) **An institutional electronic mailing system, and**

    b) **A learning management system that provides the necessary technological support for distance education**

(a) and (b): Faculty support for the development and instruction is provided by the Information Technology Department and the Academic Computing Unit professionals. Consultation is available for issues such as instructional design, software development, and educational research. These technologies and opportunities ensure students enrolled in and faculty teaching have adequate access to leaning resources.

Canvas LMS is the current learning management system utilized by UMES throughout the campus. For faculty, the Center for Instructional Technology & Online Learning (CITOL) https://wwwcp.umes.edu/citol/ supports the development, design, and delivery of online and hybrid programs, classes, and workshops with a focus on flexibility, resiliency, equity, accessibility, privacy, and safety (FREAPS). CITOL assists faculty, staff, and students in all aspects of digital teaching and learning concerning pedagogy and technology. This includes the use of the Canvas Learning Management System, Echo360, Google Workspace, Respondus 4.0, and Respondus LockDown Browser.

L. Adequacy of Financial Resources with Documentation (as outlined in COMAR 13B.02.03.14)

1. **Complete Table 1: Resources and Narrative Rationale. Provide finance data for the first five years of program implementation. Enter figures into each cell and provide a total for each year. Also provide a narrative rationale for each resource category. If resources have been or will be reallocated to support the proposed program, briefly discuss the sources of those funds.**

TABLE 1: RESOURCES					
Resources Categories	(Year 1)	(Year 2)	(Year 3)	(Year 4)	(Year 5)
1. Reallocated Funds[1]	$0.00	$0.00	$0.00	$0.00	$0.00
2. Tuition/Fee Revenue[2] (c+g below)	$139,068.00	$275,400.00	$411,730.00	$548,064.00	$694,396.00
a. # FT Students	15	30	45	60	75
b. # Annual Tuition/Fee Rate	$8,724.00	$8,724.00	$8,724.00	$8,724.00	$8,724.00
c. Annual / Full Time Revenue (a x b)	$130,860.00	$261,720.00	$392,580.00	$523,440.00	$654,300.00
d. # PT Students	3	5	7	9	11
e. Credit Hour Rate	$228.00	$228.00	$228.00	$228.00	$228.00
f. Annual Credit Hours	12	12	12	12	12
g. Total Part Time Revenue (d x e x f)	$8,208.00	$13,680.00	$19,150.00	$24,624.00	$30,096.00
3. Grants, Contracts & Other External Sources[3]	$0.00	$0.00	$0.00	$0.00	$0.00
4. Other Sources	$0.00	$0.00	$0.00	$0.00	$0.00
TOTAL (Add 1 - 4)	$139,068.00	$275,400.00	$411,730.00	$548,064.00	$694,396.00

2. Complete Table 2: Program Expenditures and Narrative Rationale. Provide finance data for the first five years of program implementation. Enter figures into each cell and provide a total for each year. Also provide a narrative rationale for each expenditure category.

TABLE 2: EXPENDITURES					
Expenditure Categories	(Year 1)	(Year 2)	(Year 3)	(Year 4)	(Year 5)
1. Total Faculty Expenses (b + c below)	0	0	0	0	0
a. # FTE	0	0	0	0	0
b. Total Salary	0	0	0	0	0
c. Total Benefits	0	0	0	0	0
2. Total Administrative Staff Expenses (b + c) below	0	0	0	0	0
a. # FTE	0	0	0	0	0
b. Total Salary	0	0	0	0	0
c. Total Benefits	0	0	0	0	0
3. Total Support Staff Expenses (b + c below)	0	0	0	0	0
a. # FTE	0	0	0	0	0
b. Total Salary	0	0	0	0	0
c. Total Benefits	0	0	0	0	0
4. Equipment	0	0	0	0	0
5. Library	0	0	0	0	0
6. New or Renovated Space	0	0	0	0	0
7. Other Expenses	50,000	0	0	0	0
TOTAL (Add 1 - 7)	50,000	0	0	0	0

Narrative Rationale for Table 1: Resources

1. Reallocated Funds
   No funds will be reallocated from existing programs.

2. Tuition and Fee Revenue
   We assume that tuition and fees will remain unchanged for the next five years. The annual in-state tuition rate is $8724 for full time students. For part-time students, the credit hour rate is $228/credit. The two values were used in calculating the revenue for full-time students and 6 credits per semester (i.e., 12 credit per year) for part-time students.

3. Grants and Contracts
   No additional sources of funding are expected currently.

4. Other Sources
   No additional sources of funding are expected currently.

5. Total Year: 5-year estimate is provided.

Narrative Rationale for Table 2: Expenditures

1. Faculty (# FTE, Salary and Benefits)

   No additional faculty lines are requested. Two (2) new full-time tenure-track faculty members in EE joined UMES in Fall 2024. Four (4) existing faculty in EE will jointly support the proposed Bachelor of Science in Electrical Engineering Program.

2. Support Staff (# FTE, Salary and Benefits)
   There will be no need for additional administrative staff. The existing department and school administrative staff will be sufficient to run the program.

3. Equipment
   Not requested.

4. Library
   Minimal funds are needed to purchase additional engineering textbooks.

5. New and/or Renovated Space
   Not needed

6. Other Expenses

M. Adequacy of Provisions for Evaluation of Program (as outlined in COMAR 13B.02.03.15).

1. **Discuss procedures for evaluating courses, faculty and student learning outcomes.**

2. **Explain how the institution will evaluate the proposed program's educational effectiveness, including assessments of student learning outcomes, student retention, student and faculty satisfaction, and cost-effectiveness.**

1 and 2:

UMES has a comprehensive course and program evaluation process. Each course syllabus has a set of written student learning outcomes. The course learning outcomes are assessed through embedded questions on tests, assignments and portfolios that address specific course outcomes. Data is collected and analyzed, and results are used to improve course curriculum and pedagogy.

Once the program is launched, its courses will enter the course evaluation system. Teaching evaluations ask students to reflect on the course structure, the course content, and the instructor's performance. Summary data will be reviewed by faculty members, the program chair, and the school administration to determine whether revision or improvement actions are necessary.

In addition, every faculty is evaluated each year. The evaluation process includes an assessment of faculty teaching, faculty research record and productivity, school-wide and department service. To receive a meritorious evaluation, a faculty member must demonstrate effective teaching, active scholarly activities and publication, and service. There is also a provision for administration to develop an improvement plan for faculty members who have not done well in teaching. Tenured faculty will undergo a five-year post-tenure review.

Periodic academic program review takes place in a cycle of every five years. Data regarding program enrollment, retention and graduation rates are collected by the Institutional, Advancement, Marketing, and Research Division in conjunction with the program coordinator. The data are analyzed against program outcomes and results are used to improve the program.

Program accreditation comprehensive review takes place every six years per ABET criteria. The assessment, evaluation, and continuous improvement are integral parts of faculty teaching and performance evaluation.

N. Consistency with the State's Minority Student Achievement Goals (as outlined in COMAR 13B.02.03.05).

1. **Discuss how the proposed program addresses minority student access & success, and the institution's cultural diversity goals and initiatives.**

UMES mission is compatible with the State of Maryland's minority achievement goals. UMES is an 1890 land-grant HBCU. Our programs attract a diverse set of students with most of the student

population being African American and those who are multiethnic and multicultural. The University actively recruits minority populations for all undergraduate and graduate level degrees. Special attention is also provided to recruit females into the STEM and multidisciplinary programs at all degree levels – undergraduate, Master's, and doctoral. The same attention will be given to the proposed Bachelor of Science degree program in electrical engineering.

O. Relationship to Low Productivity Programs Identified by the Commission:

1. If the proposed program is directly related to an identified low productivity program, discuss how the fiscal resources (including faculty, administration, library resources and general operating expenses) may be redistributed to this program.

The proposed program has no relationship to low productivity programs.

P. Adequacy of Distance Education Programs (as outlined in COMAR 13B.02.03.22)

1. **Provide affirmation and any appropriate evidence that the institution is eligible to provide Distance Education.**
2. **Provide assurance and any appropriate evidence that the institution complies with the C-RAC guidelines, particularly as it relates to the proposed program.**

Not applicable. The proposed program is not a distance education program.

TOPIC: University of Maryland Eastern Shore Bachelor of Science (B.S.) in Mechanical Engineering

COMMITTEE: Education Policy and Student Life and Safety

DATE OF COMMITTEE MEETING: April 3, 2025

SUMMARY: The University of Maryland Eastern Shore proposes establishing a Bachelor of Science in Mechanical Engineering (BSME) program. This program will prepare graduates for careers as mechanical engineering professionals. Mechanical engineers play key roles in a wide range of industries, including automotive, aerospace, biotechnology, computers, electronics, microelectromechanical systems, energy conversion, robotics and automation, and manufacturing.

The broad scope of mechanical engineering allows students to explore diverse career opportunities beyond these industries. The proposed BSME program aims to provide prospective students with the opportunity to earn a Bachelor of Science in Mechanical Engineering, offering a pathway to a career that integrates engineering and technology to enhance the quality of human life.

The program's curriculum includes core engineering courses, supporting science and math courses, major electives, and general education courses. Our courses emphasize both experimental and analytical learning to develop a deep understanding of mechanical engineering technology and complex robotic systems.

The curriculum of 120 credit hours will be divided among the following categories: 1) 39 credit hours in general education, 2) 54 credit hours of major core courses such as statics, dynamics, fluid mechanics, thermodynamics, heat transfer, properties of materials, control, instrumentation, and senior design project, 3) 8 credit hours of mechanical engineering electives, such as finite element analysis, mechatronics, vibrations, robotics, micro electro-mechanical systems, digital control systems, and 4) 19 credit hours of supportive math and science courses.

ALTERNATIVE(S): The Regents may not approve the program or may request further information.

FISCAL IMPACT: No additional funds are required. The program can be supported by the projected tuition and fee revenue.

CHANCELLOR'S RECOMMENDATION: That the Education Policy and Student Life and Safety Committee recommend that the Board of Regents approve the University of Maryland Eastern Shore proposal to offer the Bachelor of Science (B.S.) in Mechanical Engineering.

COMMITTEE RECOMMENDATION:	DATE:
BOARD ACTION:	DATE:
SUBMITTED BY: Alison M. Wrynn 301-445-1992	awrynn@usmd.edu

UNIVERSITY OF MARYLAND EASTERN SHORE
Office of the President

March 17, 2025

Dr. Jay Perman, Chancellor
University System of Maryland
701 E. Pratt St.
Baltimore, MD 21202

RE: Substantial Change Proposal (Bachelor of Science degree in Mechanical Engineering)

Dear Chancellor Perman:

The University of Maryland Eastern Shore hereby submits a substantial change proposal to begin offering a Bachelor of Science degree in Mechanical Engineering (BSME) within the School of Business and Technology.

Consistent with its mission, UMES seeks to expand its capacity to offer unique and/or critical certificate and degree programs. As such, UMES has developed a Bachelor of Science in Mechanical Engineering (BSME). This new program will be established in the Department of Engineering and will complement the university's undergraduate programs in Engineering by combining engineering physics, mathematics, and materials science to design, analyze, manufacture, and maintain mechanical systems. The proposed BSME program aims to offer prospective students the opportunity to pursue a Bachelor of Science degree in Mechanical Engineering, providing a pathway to a career that combines engineering and technology.

The proposed degree program will position UMES at the forefront of educational innovation in STEAM related academic programs. The proposed Mechanical Engineering program will go beyond the current General Engineering (mechanical specialization) program offered and will strengthen the workforce in the State of Maryland. It will also expand the pipeline of students entering the mainstream mechanical engineering field. Mechanical engineering remains in demand all over the world due to its versatile applications across various industries. The discipline's focus on designing, analyzing, and manufacturing mechanical systems makes it essential for sectors like automotive, aerospace, energy, robotics, and manufacturing. The proposed BSME program is expected to enable a stronger and multi-disciplinary research collaboration across the campus community, thus fueling research forward in many other disciplines beyond those created in applied science and engineering disciplines and creating a much broader impact on the Eastern Shore community as well as the State of Maryland.

The UMES campus is in Somerset County, Maryland. The BSME will expand the educational opportunities for educationally disadvantaged students by developing a high-quality and innovative academic program that aligns with the educational needs of the region and the state of Maryland. The mission of the proposed program is to provide students and working professionals with advanced training in the discipline and to contribute to the economic development in the state of Maryland, especially in the Eastern Shore region where learning opportunities in advanced engineering disciplines are severely limited.

The attached proposal has undergone the established UMES curriculum approval process and I fully support the proposed program.

Thank you for your consideration.

Sincerely,

Heidi M. Anderson, Ph.D., FAPhA
President

Copy: Dr. Rondall Allen, Provost and Vice President for Academic Affairs
Dr. Derrek Dunn, Dean, School of Business and Technology
Dr. Yuanwei Jin, Department Chair, Department of Engineering

UNIVERSITY SYSTEM OF MARYLAND INSTITUTION PROPOSAL FOR

X	New Instructional Program
	Substantial Expansion/Major Modification
	Cooperative Degree Program
X	Within Existing Resources, or
	Requiring New Resources

University of Maryland Eastern Shore

Institution Submitting Proposal

Undergraduate Mechanical Engineering

Title of Proposed Program

Bachelor of Science	Fall 2025
Award to be Offered	Projected Implementation Date
0911	14.1901
Proposed HEGIS Code	Proposed CIP Code
Department of Engineering	Leesa Thomas Banks
Department in which program will be located	Department Contact
410-651-7591	lpthomasbanks@umes.edu
Contact Phone Number	Contact E-Mail Address
	March 17, 2025
Signature of President or Designee	Date

Proposal for New Undergraduate Degree Program

Bachelor of Science in Mechanical Engineering (BSME)

A. Centrality to Institutional Mission Statement and Planning Priorities

1. Provide a description of the program, including each area of concentration (if applicable), and how it relates to the institution's approved mission.

The Department of Engineering and Aviation Sciences proposes to establish a Bachelor of Science degree in Mechanical Engineering (BSME) within the School of Business and Technology (SBT) at UMES. Mechanical engineering is the study of physical machines that use force and movement. It combines engineering physics, mathematics, and materials science to design, analyze, manufacture, and maintain mechanical systems. Mechanical engineers work in many industries, including automotive, aerospace, biotechnology, computers, electronics, energy conversion, robotics, and automation. The proposed BSME program aims to offer prospective students the opportunity to pursue a Bachelor of Science degree in Mechanical Engineering, providing a pathway to a career that combines engineering and technology.

The program's curriculum includes core engineering courses, supporting science and math courses, major electives, and general education courses. This curriculum is designed to offer both a core understanding of traditional engineering disciplines, and an in-depth knowledge of the body. Our courses emphasize experimental and analytical coursework to gain a strong understanding of mechanical engineering technology and complex robotic systems.

The mission of UMES, as an 1890 HBCU land-grant institution, is to promote distinctive learning, discovery and engagement opportunities in the arts and sciences, education, technology, engineering, agriculture, business and health professions. Central to this purpose is the guided interest in providing individuals, including first generation college students, access to a holistic learning environment that fosters multicultural diversity, academic success, and intellectual and social growth. The proposed program imbibes itself in this mission and it is guided by the opportunity to increase graduation rates of underrepresented minorities in the fields of mechanical engineering.

2. Explain how the proposed program supports the institution's strategic goals and provide evidence that affirms it is an institutional priority.

The proposed mechanical engineering degree program supports the institution's strategic goals. According to the UMES Strategic Plan 2023, (see the link https://wwwcp.umes.edu/president/strategic-plan/), we identified the following three goals under the Three Priorities:

- Priority 1: Academic Excellence and Innovation: "Goal 1.1: Attract, retain, and graduate more aspiring students at the undergraduate and graduate levels"

- Priority 2: Access, Affordability, and Achievement: “Goal 2.1: Increase Enrollment”.
- Priority 3: Workforce and Economic Development: “Goal 3.3 Diversify and strengthen Maryland’s knowledge workforce by expanding the pipeline of underrepresented minority students entering critical workforce fields (science technology engineering, aviation and mathematics (STEAM), cyber, health care, education, social work, human services, and technology)”.

The proposed degree program will help the institution achieve its strategic goals listed above and position UMES to the forefront of educational innovation in STEAM related academic programs. The proposed Mechanical Engineering program is to go beyond the current General Engineering (mechanical specialization) program that we offer to students to diversify and strengthen the tech workforce for the State of Maryland and to expand the pipeline of underrepresented minority students entering the mainstream mechanical engineering field characterized by industry. According to Bureau of Labor statistics, nationwide, the overall employment of mechanical engineers is projected to grow 10 percent from 2022 to 2032, much faster than the average for all occupations. Thus, about 19,200 openings for mechanical engineers are projected each year, on average, over the decade. Mechanical engineering remains in demand all over the world due to its versatile applications across various industries. The discipline’s focus on designing, analyzing, and manufacturing mechanical systems makes it essential for sectors like automotive, aerospace, energy, robotics, and manufacturing. Additionally, emerging fields such as renewable energy, sustainable design, and automation create new opportunities. Global demand for products and infrastructure also sustains the demand for mechanical engineers. The profession's adaptability and problem-solving skills ensure its continued relevance, making it a sought-after career choice nationwide and globally.

The proposed BSME program is expected to enable a stronger and multi-disciplinary research collaboration across the campus community, thus fueling research forward in many other disciplines beyond those created in applied science and engineering disciplines and creating a much broader impact on the Eastern Shore community as well as the State of Maryland.

3. Provide a brief narrative of how the proposed program will be adequately funded for at least the first five years of program implementation. (Additional related information is required in section L.

With the commission of the Engineering and Aviation Science Complex, a $103 million investment from the state, the proposed program will be supported by about two dozen state-of-the-art engineering laboratories such as the Robotics and Automation Lab, MEMS Lab with a class ISO 5 clean room, Fluid and Thermal Lab, Statics and Materials Lab, etc. One (1) new faculty member in ME will be recruited along with the existing four (4) faculty members in ME will be involved to support this proposed BSME program to develop courses and deliver instructions and labs. The new faculty line will be funded by the HBCU settlement fund that UMES receives for the first five years of program implementation. By leveraging the existing BS in General

Engineering program, we anticipate adequate resources for faculty lines and laboratories for instruction and research in the field of ME to ensure the success of this degree program.

4. **Provide a description of the institution's a commitment to:**
    a) **ongoing administrative, financial, and technical support of the proposed program**

The University Administration is committed to adequately funding this program and has designated it as one of the priority areas for expanding the institution's footprint. With the HBCU Lawsuit Settlement Fund, UMES, the School of Business and Technology, and the Department of Engineering and Aviation Sciences are equipped with the necessary resources and are committed to supporting the program in every way, including ongoing administrative, financial, and technical support.

    b) **continuation of the program for a period of time sufficient to allow enrolled students to complete the program.**

This degree program is created by leveraging, in part, the existing faculty and staff in the Departments of Engineering and Aviation Sciences at UMES, as well as the state-of-the-art engineering laboratories in the Engineering and Aviation Science Complex on UMES campus. One (1) additional new full-time tenure-track faculty member with a terminal degree in the field of mechanical engineering or a closely related field will be recruited to develop and deliver courses and labs for the program. The university is fully committed to continuing the proposed BSME program for a sufficient period to allow enrolled students to complete the program.

B. Critical and Compelling Regional or Statewide Need as Identified in the State Plan

1. **Demonstrate demand and need for the program in terms of meeting present and future needs of the region and the State in general based on one or more of the following:**

    a) **The need for the advancement and evolution of knowledge**

Mechanical engineering is the study of physical machines that involve force and movement. It's a branch of engineering that combines engineering physics, mathematics, and materials science to design, analyze, manufacture, and maintain mechanical systems. Mechanical engineers are problem solvers who apply their skills to design, develop, build, and test all sorts of mechanical devices, tools, engines, and machines in just about every type of industry. Mechanical engineers will work on teams to develop a wide range of products and systems including, transmissions, engine parts, aircraft engines, control systems, prosthetic devices, disk drives, printers, semiconductor tools, sensors, gas turbines, wind turbines, fuel cells, compressors, robots, machine tools, space shuttle vehicles, turbines, pumps, power plants, factories, and more.

The need for the advancement and evolution of mechanical technology demands academic programs such as the proposed BSME program to educate and produce next generation researchers and engineers to handle challenges in next generation technology evolution.

b) Societal needs, including expanding educational opportunities and choices for minority and educationally disadvantaged students at institutions of higher education

The UMES campus is in Somerset County, Maryland, one of the poorest counties in the state, according to the U.S. Census Bureau. Lack of educational opportunities and choices for minority and educationally disadvantaged students calls for development of high-quality and innovative academic programming to align academic programs with the educational needs of the region and the state of Maryland.

UMES currently offers the Bachelor of Science in General Engineering degree program in the Eastern Shore of Maryland. Mechanical specialization is one of the four specializations. Since the inception of the engineering program over the past 17 years there have been more than 160 graduates. Most of these students joined the technical workforce in industry, such as Lockheed Martin, Northrup Grumman, ASML, John Deere, etc. Among those graduates, more than a dozen former graduates are working in the Wallops Island area for NASA and its contractors. About two dozen or more have gone on to pursue graduate degrees (master's and doctorate) in electrical engineering, mechanical engineering, or engineering science at other engineering schools, including Dartmouth College, Rensselaer Polytechnical Institute, University of Maryland College Park, Old Dominion University, etc. The graduation and job placement data have demonstrated the success of the general engineering program at UMES.

However, over the course of the past ten years, based on the feedback from the graduates concerning their experiences during the job search process, we discovered that the nature of the General Engineering, its name and the curriculum, may have hindered them for landing jobs as opposed to those applicants who graduate with a mainstream degree such as Mechanical Engineering. To be explicit, General Engineering (Mechanical Specialization) is not the same as Mechanical Engineering from the viewpoint of some employers. By establishing a BSME degree program at UMES, we hope to remove the barrier for our graduates in entering the mechanical engineering workforce. Furthermore, we have established a Master of Science in Electrical and Mechatronics Engineering (MSEME) degree at UMES. The proposed BSME degree is expected to enable streamlined progression of our ME students to enroll in the MSEME program for graduate studies. We further anticipate that the established BSME program will facilitate transfer students with associate degrees in mechanical engineering from the community colleges.

The proposed mechanical engineering program is expected to further enhance UMES's position as a top choice higher education institution for STEM education for minority and educationally disadvantaged students in the state and the surrounding regions with the goal of developing a pipeline of engineering and STEM workforce for the state.

c) The need to strengthen and expand the capacity of historically black institutions to provide high quality and unique educational programs

The proposed BSME program will significantly strengthen and expand the capability of UMES, one of the four HBIs in the state, to provide high quality and unique educational experiences to students. In the State of Maryland, only Johns Hopkins University (JHU), University of Maryland, College Park (UMCP), and University of Maryland, Baltimore County (UMBC) offer Bachelor of Science in Mechanical Engineering degrees. However, all three institutions are located outside of the Eastern Shore region. The proposed BSME program at UMES will increase minority BSME degree grantees in the fields of mechanical engineering. It will also strengthen and expand the research capacity of UMES and provide high quality and unique educational programs at a high level.

2. Provide evidence that the perceived need is consistent with the Maryland State Plan for Postsecondary Education**.**

The proposed BSME degree program is well aligned with the 2021-2025 Maryland State Plan for Postsecondary Education in all three areas: Access, Success, and Innovation.

Access – Ensure equitable access to affordable and quality postsecondary education for all Maryland residents.

Mechanical engineers play key roles in a wide range of industries including automotive, aerospace, biotechnology, computers, electronics, microelectromechanical systems, energy conversion, robotics and automation, and manufacturing. The American Society of Mechanical Engineers (ASME) currently lists 36 technical divisions, from advanced energy systems and aerospace engineering to solid-waste engineering and textile engineering. The breadth of the mechanical engineering discipline allows students a variety of career options beyond the industries listed above. Regardless of the path they envision for themselves, a mechanical engineering education empowers students with creative thinking skills to design an exciting product or system; analytical tools to achieve their design goals; the ability to overcome all constraints; and the teamwork needed to design, market, and produce a system. These valuable skills can be applied to launch careers in many other fields, such as medicine, law, consulting, management, banking, and finance.

The proposed BSME degree program will provide equitable access and quality education to all Maryland residents, including those with disadvantaged backgrounds, to develop a strong mechanical engineering workforce for the state.

Success – Promote and implement practices and policies that will ensure student success.

The practices and policies concerning the proposed BSME degree program align with all the existing policies at the University, which will ensure student success. By providing a carefully developed curriculum, sufficient engineering laboratory facilities, equipment, and adequate faculty members for advising and teaching, the proposed degree program will help ensure student graduation and successful job placement.

Innovation – Foster innovation in all aspects of Maryland higher education to improve access and student success

Specifically, the proposed BSME degree program aligns with the goal of "Innovation" of the State Plan, which aims to "foster innovation in all aspects of Maryland higher education to improve access and student success". The proposed program will help achieve the goal of "Economic Growth and Vitality", which is centered on supporting a knowledge-based economy through increased education and training and is to ensure that Historically Black Institutions are "competitive, both in terms of program and infrastructure", with Maryland's other state institutions. Ultimately, the proposed degree program will prepare highly qualified scientists and engineers to contribute to the economic growth and vitality of Maryland by providing them with new knowledge and skillsets in emerging technologies so they can obtain the skills they need to succeed in the workforce.

C. Quantifiable and Reliable Evidence and Documentation of Market Supply and Demand in the Region and State

1. Describe potential industry or industries, employment opportunities, and expected level of entry (*ex: mid-level management*) for graduates of the proposed program.

The role of a mechanical engineer is to take a product from an idea to the marketplace. To accomplish this, the mechanical engineer must be able to determine the forces and thermal environment that a product, its parts, or its subsystems will encounter; design them for functionality, aesthetics, and durability; and determine the best manufacturing approach that will ensure operation without failure. A BSME degree opens a plethora of opportunities across a broad spectrum of industries. For example, in the aerospace industry, mechanical engineers contribute to the design and testing of aircraft, spacecraft, and propulsion systems for companies like Boeing, SpaceX, or NASA. In the automotive industry, they work on vehicle design, engine development, and fuel efficiency improvements for manufacturers such as Ford, Tesla, or General Motors. Innovation in this area of engineering will no doubt continue in accordance with the development of technology - improving health care and patient outcomes in the process. The proposed BSME program will produce graduates in all these technical fields, expected as entry level engineers or engineering managers.

2. **Present data and analysis projecting market demand and the availability of openings in a job market to be served by the new program.**

The 2023 median pay for mechanical engineers is $99,510 per year. Data by the Bureau of Labor Statistics (BLS) (https://www.bls.gov/ooh/architecture-and-engineering/mechanical-engineers.htm) shows that overall employment of mechanical engineers is projected to grow 10 percent from 2022 to 2032, much faster than the average for all occupations. About 19,200 openings for mechanical engineers are projected each year, on average, over the decade. Many of those openings are expected to result from the need to replace workers who transfer to different occupations or exit the labor force.

A recent study on the job market for mechanical engineers in the US (https://www.careerexplorer.com/careers/mechanical-engineer/job-market/) shows that Maryland employed 5540 mechanical engineers in the industry, ranked 16th in the nation. This shows that Maryland has the potential to further increase the number of employment opportunities in the mechanical engineering field. The BLS predicts that most opportunities for mechanical engineers are in aerospace, automotive, biomedical, and construction industries.

Moreover, according to Occupational Information Network, i.e., O-Net Online, (https://www.onetonline.org/link/summary/17-2141.00), job titles suitable for graduates of the mechanical engineering program vary, such as Application Engineer, Design Engineer, Design Maintenance Engineer, Equipment Engineer, Mechanical Design Engineer, Mechanical Engineer, Process Engineer, Product Engineer, Project Engineer, Test Engineer. Perform engineering duties in planning and designing tools, engines, machines, and other mechanically functioning equipment. Oversee installation, operation, maintenance, and repair of equipment such as centralized heat, gas, water, and steam systems.

Among those position titles, industries with the highest concentration of employment in Mechanical Engineers are listed in the table below:
(https://www.bls.gov/oes/current/oes172141.htm)

Industry	Employment	Annual Mean Wage
Engine, Turbine, and Power Transmission Equipment Manufacturing	5,220	$111,630
Machinery Manufacturing	28,930	$93,900
Architectural, Engineering, and Related Services	58,810	$104,620
Metalworking Machinery Manufacturing	5,660	$84,820
Railroad Rolling Stock Manufacturing	670	$116,600

Finally, the Maryland Occupational Projections - Workforce Information and Performance had updated the projections of engineering jobs during a ten-year period of 2022-2032. It is anticipated that there will be an 8.43% increase of occupations in Architecture and Engineering in the state of Maryland. The proposed BSME program will help meet the demand of the engineering workforce.

3. **Discuss and provide evidence of market surveys that clearly provide quantifiable and reliable data on the educational and training needs and the anticipated number of vacancies expected over the next 5 years.**

The employment data from the Bureau of Labor Statistics (BLS) is typically used to determine market demand. Data by BLS (https://www.bls.gov/ooh/architecture-and-engineering/mechanical-engineers.htm) shows that overall employment of mechanical engineers is projected to grow 10 percent from 2022 to 2032, much faster than the average for all occupations. About 19,200 openings for mechanical engineers are projected each year, on average, over the decade. Many of those openings are expected to result from the need to replace workers who transfer to different occupations or exit the labor force.

The career outlook for mechanical engineers is strong. Mechanical engineering features various specializations, from robotics to manufacturing to aerospace technology. As a result, it can offer numerous opportunities in industries ranging from automotive to energy production. Industry data shows (https://www.recruiter.com/careers/mechanical-engineers/outlook/) that the overall job outlook for mechanical engineer careers has been positive since 2004. Vacancies for this career have increased by 35.45 percent nationwide in that time, with an average growth of 2.22 percent per year. Demand for Mechanical Engineers is expected to go up, with an expected 34,750 new jobs filled by 2029. This represents an annual increase of 1.31 percent over the next few years.

4. **Provide data showing the current and projected supply of prospective graduates.**

Similar mechanical engineering BS programs that are offered by HBCUs in the region include: The University of District of Columbia and Howard University. In the State of Maryland, three institutions offer BSME degrees, The Johns Hopkins University, University of Maryland, College Park, University of Maryland, Baltimore County. Based upon data available to the public, the number of degrees awarded in BSME in the three Maryland institutions and other HBCUs in the region is summarized below:

Institutions	**# of ME BS Degree Awarded**
Johns Hopkins University	40 (2022-2023)
University of Maryland, College Park	360 (2022-2023)

University of Maryland, Baltimore County	101 (2022-2023)
University of District of Columbia	20 (2022-2023)
Howard University	25 (2022-2023)

The data shows that the number of awarded BS degrees in mechanical engineering from HBCUs is still low. UMES is in a good position to address the shortage of HBCU graduates of a BSME program. UMES is thus uniquely positioned to address this need within the State of Maryland. It is our belief that the market demand is sufficiently high, the geographic draw of students is sufficiently distinct, the proposed BSME program to be offered in the Eastern Shore of the state, along with other similar programs in the state (e.g., JHU's BSME, UMCP's BSME, and UMBC's BSME) will provide valuable contributions to the Maryland workforce.

D. Reasonableness of Program Duplication

1. Identify similar programs in the State and/or same geographical area. Discuss similarities and differences between the proposed program and others in the same degree to be awarded.

The proposed program is unique and building upon the existing faculty expertise in the general engineering program at UMES. There is no other mechanical engineering degree program in the Eastern Shore of Maryland. Although other institutions in Maryland, such as University of Maryland, College Park, University of Maryland, Baltimore County, and the Johns Hopkins University offers a BSME degree program, these institutions are located about 130 miles away from the Eastern Shore. UMES serves a different geographical area compared with other parts or regions of the state. Moreover, the proposed program offers a unique curriculum with a focus in electronics, circuit design, artificial intelligence in which technical talents and workforce is seriously lacking, especially in the rural eastern shore of the state. The proposed UMES BSME program supplements other BSME programs offered in the state.

2. Provide justification for the proposed program

Mechanical engineers are in high demand and are essential to many industries, including transportation, healthcare, construction, robotics, aerospace, and artificial intelligence. Mechanical engineers create prosthetic limbs. They design new technology to improve food production, invent 3D printers and wireless chargers, and develop better water supplies. They even create robotic manufacturing plants. And yes, they also make fast cars, faster planes and even faster rockets. They do this all over the world, and almost every industry you can think of relies on mechanical engineering to thrive. That is why there is such a huge global demand for mechanical engineers, and why they're paid so well.

Mechanical engineering is one of the broadest engineering disciplines, and you may be surprised by the diversity of roles a mechanical engineer can take on. Excellent problem-solvers and communicators, mechanical engineers excel at breaking complicated subjects down into easily digestible information. This is why they so often take on leadership roles, such as project manager or business executive, or are snatched up by management consulting firms. Designing and producing a product that adds value to a person's life is one thing. Articulating how it does so is something else entirely.

UMES, as a part of the national research community, will join collaborate with other HBCUs in the race to produce a qualified technical workforce. The BSME program we propose will enable mechanical engineering students to obtain both foundational and practical knowledge in various aspects of mechanical system design and testing. As we can imagine, BSME graduates of UMES, will play a pivotal role in bridging the diversity gap within the engineering landscape while fostering a generation of talented, diverse and innovative engineers poised to shape the future of industries in the region, the state of Maryland, and worldwide.

E. Relevance to High-demand Programs at Historically Black Institutions (HBIs)

1. Discuss the program's potential impact on the implementation or maintenance of high-demand programs at HBI's.

Engineering programs with various sub-disciplinary areas have always been in high demand on the employment spectrum. Among the four HBIs in the state of Maryland, no mechanical engineering (BS) degree program is offered. The proposed BSME program at UMES, if established, will position UMES as a center for medical technology education and research in the rural area of Eastern Shore. The program will enable UMES to produce a pipeline of high caliber workforce in mechanical engineering to support manufacturing facilities and other industry fields such as aerospace and automotive.

F. Relevance to the identity of Historically Black Institutions (HBIs)

1. Discuss the program's potential impact on the uniqueness and institutional identities and missions of HBIs.

UMES has envisioned a strong presence in education and innovation in the STEAM field, and engineering is one of the focus areas. The proposed BSME program at UMES, if established, will strengthen the position of UMES as a center for engineering education and research in the rural area of the Eastern Shore, and thus reaffirming the mission of UMES as an 1890 land grant institution. The program will enable UMES to produce a pipeline of high caliber

workforce in mechanical engineering to support the high demand of tech workforce in the region and the state.

G. Adequacy of Curriculum Design, Program Modality, and Related Learning Outcomes (as outlined in COMAR 13B.02.03.10):

1. Describe how the proposed program was established, and also describe the faculty who will oversee the program.

Curriculum Design: The proposed program was established through a rigorous review of unmet needs by the institution. It started from the faculty in the engineering program, with approval from the Departmental Curriculum Committee, School Curriculum Committee, Graduate Faculty Council, Senate Curriculum Committee, etc. The curriculum was developed by the faculty in the Department of Engineering and Aviation Sciences.

Faculty Oversight: The courses of the curriculum in the proposed BSME degree program will be taught by faculty in the Department of Engineering and Aviation Sciences. One (1) new full-time tenure-track faculty member with a Ph.D. degree in the mechanical engineering field will be recruited. The new faculty member is expected to develop courses and labs and deliver teaching and research, in addition to the existing four Mechanical Engineering faculty in the department will also help with the Engineering program because the majority of courses in the core and electives of the BSME curriculum are the same as courses in the existing Engineering Program curriculum. This arrangement ensures the new BSME program is fully supported in terms of faculty resources. Please see the detailed list of ME faculty background in the current engineering program.

Program Modality: The program will be offered at the main campus of UMES.

2. Describe educational objectives and learning outcomes appropriate to the rigor, breadth, and (modality) of the program.

To ensure the curriculum of the BSME program reflects the rigor and highest standards appropriate to the mechanical engineering field, we will seek and maintain accreditation from the Engineering Accreditation Commission (EAC) of ABET, https://www.abet.org, under the commission's General Criteria and the Program Criteria for Mechanical Engineering for this BSME program.

The educational objectives of the curriculum of the proposed BSME program are to enable graduates of the program to develop the ability of:

- Applying principles of engineering, biology, human physiology, chemistry, calculus-based physics, mathematics (through differential equations), and statistics;
- Solving bio/biomedical engineering problems, including those associated with the interaction between living and non-living systems;

- Analyzing, modeling, designing and realizing bio/biomedical engineering devices, systems, components, or processes; and
- Making measurements on and interpreting data from living systems.

The learning outcomes of the program align with the learning outcomes of the ABET (1)-(7) specified by the Engineering Accreditation Commission (EAC).

- [1]. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics;
- [2]. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economics factors;
- [3]. An ability to communicate effectively with a range of audiences;
- [4]. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts;
- [5]. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives;
- [6]. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions;
- [7]. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

Students will learn analytical and experimental methods that are broadly applicable in the field of biomedical engineering. They will also be given specific instruction and hands-on laboratory experimental leaning experiences on how to apply these methods to a large range of problems in biomedical engineering.

3. Explain how the institution will:

a) provide for assessment of student achievement of learning outcomes in the program

Assessment Methods based on established departmental standards will include the following:

- Assessing written and oral student presentations, written assignments and research projects.
- Evaluating student performance in exams, quizzes and assignments in required major courses.
- Assessing comprehensive senior design project reports in the two tracks of the program.

b) document student achievement of learning outcomes in the program

The department will document student achievement of the learning outcomes in the program in the same fashion as its current accredited engineering undergraduate program. Assessment of learning outcomes will be conducted every six years per ABET accreditation requirements.

4. Provide a list of courses with title, semester credit hours and course descriptions, along with a description of program requirements

The Mechanical Engineering BS program consists of **120** total credit hours. The number of credits is determined based upon the MHEC requirement for BS degree and a survey of credit requirement for similar mechanical engineering programs in the region. The curricula include 28 credit hours of general education courses in English, arts and humanities, social and behavioral sciences, and emerging issues. An additional 11 credits in mathematics and physical sciences are required under the General Education program, which are included as a part of the requirements for the Mechanical Engineering major. This makes the total credits for General Education to be 39 credit hours. The Mechanical Engineering curriculum also requires 19 credits of supportive math and physics courses. Students take 54 credit hours of core mechanical engineering courses. Students choose 8 credit hours of elective courses. The program is on a semester basis. The total number of credits and their distribution is given as follows:

	Category	***Distribution***
I.	General Education Courses	39 credit hours
II.	Supportive Math & Science Courses	19 credit hours
III.	Mechanical Core Courses	54 credit hours
IV.	Elective Courses	8 credit hours

Mechanical Engineering Core Requirement		**54 credits needed**
Course Code	**Course Title**	**Credit Hours**
ENGE 150	Freshmen Engineering Design	3 hrs
ENGE 170	Programming Concepts for Engineers	3 hrs
ENGE 240	Basic Circuit Theory	3 hrs
ENGE 241	Analog Circuit Lab	1 hrs
ENGE 260	Statics	3 hrs
ENGE 261	Dynamics	3 hrs
ENGE 270	Computer Aided Design	3 hrs
ENME 325*	Properties of Materials	3 hrs
ENGE 320	Statistics and Probability for Engineers	3 hrs
ENME 342	Fluid Mechanics	3 hrs
ENME 345	Thermodynamics	3 hrs
ENGE 370	Computational Methods in Engineering	3 hrs
ENME 346	Heat Transfer	3 hrs

ENME 347*	Thermal and Fluid Lab	1 hrs
ENGE 362	Mechanics of Materials	3 hrs
ENME 363*	Properties and Mechanics of Materials Lab	1 hrs
ENGE 382	Control Systems	3 hrs
ENGE 380	Instrumentation	3 hrs
ENGE 383	Control Lab	1 hrs
ENGE 475	Engineering Seminar	1 hrs
ENGE 476	Senior Design Project I	2 hrs
ENGE 477	Senior Design Project II	2 hrs

Mechanical Engineering Elective		**8 credits needed**
Course Code	**Course Title**	**Credit Hours**
ENAE 420	Aerodynamics	3 hrs
ENME 422	Mechanism and Machine Design	3 hrs
ENME 425	Rapid Prototyping and Product Development	3 hrs
ENME 430	Finite Element Analysis	3 hrs
ENME 440	Mechatronics	3 hrs
ENME 442	Micro Electro-Mechanical Systems	3 hrs
ENME 462	Digital Control System	3 hrs
ENAE 467	Design of Autonomous Aerial Systems	3 hrs
ENME 470*	Vibrations	3 hrs
ENME 468	Robotics	3 hrs
ENME 365*	Machine Element Design	3 hrs
ENME 472	Selected Topics in Engineering	3 hrs

Supportive Science & Math Requirement		**19 credits needed**
Course Code	**Course Title**	**Credit Hours**
MATH 211	Calculus II	4 hrs
MATH 212	Calculus III	4 hrs

MATH 241	Differential Equation for Engineers	3 hrs
PHYS 262	General Physics II	3 hrs
PHYS 264	Genera Physics II Lab	1 hrs
PHYS 263	General Physics III	3 hrs
PHYS 265	General Physics III Lab	1 hrs

Note: ENME 325, ENME 347, and ENME 363 are new courses introduced to the major core of the BSME curriculum, ENME 365 and ENME 470 are new courses introduced to the electives of the BSME curriculum. The rest of the course are in the existing Bachelor of Science in General Engineering curriculum. This arrangement enables the existing engineering faculty to contribute to the course offerings in the proposed BSME program.

5. **Discuss how general education requirements will be met, if applicable.**

Students in the mechanical engineering program will take a total of 39 credits of general education courses. This includes 28 credit hours of general education courses in English, arts and humanities, social and behavioral sciences, and institution-specific courses, including First-Year Experience, Computer Literacy, and JEDI (Justice, Equity, Diversity, Inclusion). An additional 7 credits in biological and physical sciences and 4 credits in mathematics (Calculus I) are also required for the program. The total number of general education credits (39) and the composition of the Gen Ed courses meet the requirements of the university Gen Ed program and the engineering program curriculum.

6. **Identify any specialized accreditation or graduate certification requirements for this program and its students.**

As with the current undergraduate General Engineering degree program at UMES, we will seek to have the proposed Mechanical Engineering program accredited by the Accreditation Board of Engineering and Technology (ABET). The criteria for accrediting a Mechanical Engineering program are stipulated in two areas [Link to ABET Criteria]:

A. **I. General Criteria for Baccalaureate Level Programs, Criteria 5 Curriculum,** and
B. **III. Program Criteria for Mechanical and Similarly Named Engineering Programs**

Under ABET's **Criteria 5 Curriculum**, "The curriculum must include experience in:

> one year of a combination of college level mathematics and basic sciences (some with experimental experience) appropriate to the discipline. Basic sciences are defined as biological, chemical, and physical sciences.

one and one-half years of engineering topics, consisting of engineering sciences and engineering design appropriate to the student's field of study. Engineering sciences have their roots in mathematics and basic sciences but carry knowledge further toward creative application. These studies provide a bridge between mathematics and basic sciences on the one hand and engineering practice on the other. Engineering design is the process of devising a system, component, or process to meet desired needs. It is a decision-making process (often iterative), in which the basic sciences, mathematics, and engineering sciences are applied to convert resources optimally to meet these stated needs.

Under ABET's **Program Criteria for Mechanical Engineering**, "The curriculum must include:

a. principles of engineering, basic science, and mathematics (including multivariate calculus and differential equations);

b. applications of these topics to modeling, analysis, design, and realization of physical systems, components or processes;

c. coverage of both thermal and mechanical systems; and

d. in-depth coverage of either thermal or mechanical systems.

Here we provide an analysis of the proposed credits in each of the categories for the curriculum.

Category		Distribution	Explanation
I.	General Education	39 credit hours	This section includes credits of basic science and math courses, in particular, Chemistry (or Biology), Physics 1/Lab, and Calculus 1.
II.	Supportive Math and Sciences	19 credit hours	Per ABET program criteria, a minimum of 30 credits are required. Here, we have 19 credits in Math and Physics. The rest of the credits are in the Gen Ed section.
III.	Engineering Core Courses	54 credit hours	Per ABET program criteria, a minimum of 45 credits are required. This section includes core and elective courses in mechanical engineering subjects.
IV.	Elective Courses	8 credit hours	
	TOTAL	**120**	

7. If contracting with another institution or non-collegiate organization, provide a copy of the written contract.

No other institution or non-collegiate organization is required to offer this degree program.

8. **Provide assurance and any appropriate evidence that the proposed program will provide students with clear, complete, and timely information on the curriculum, course and degree requirements, nature of faculty/student interaction, assumptions about technology competence and skills, technical equipment requirements, learning management system, availability of academic support services and financial aid resources, and costs and payment policies.**

The entire curriculum and course specific information of the proposed degree program will be posted on the Department of Engineering and Aviation Science website:www.umes.edu/engavi. Information pertaining to the availability of academic/student support services, financial aid resources and tuition payment policies can be found on the webpages of the UMES Office of Admissions and the Office of Financial Aid.

9. **Provide assurance and any appropriate evidence that advertising, recruiting, and admissions materials will clearly and accurately represent the proposed program and the services available.**

The program will be advertised alongside other programs within the School of Business and Technology at UMES. Proper venues include Public Radio WESM 91.3, and social media such as UMES Facebook page, the University Key, as well as UMES alumni association, and other professional societies. The Department has a tradition of strong outreach program. For example, the Department has hosted in the past three years the "National Engineer's Week" (in the month of February each year) celebration for high schools from the local counties, such as Wicomico County, Somerset County, etc. Faculty with different disciplines in engineering developed hands-on activities to enable high schools to have firsthand exposure to different engineering disciplines. We will continue this engagement as an effort of advertising, recruiting and promoting engineering education.

H. Adequacy of Articulation

1. **If applicable, discuss how the program supports articulation with programs at partner institutions. Provide all relevant articulation agreements.**

This is a new program to be established at UMES home campus. UMES has existing articulation agreements with community colleges in the state, such as Wor-Wic Community College, and high schools. We will leverage the existing partnerships to develop, when appropriate, new articulation agreements with high schools in the local counties and community colleges for the proposed BSME program.

I. Adequacy of Faculty Resources (as outlined in COMAR 13B.02.03.11).

1. Provide a brief narrative demonstrating the quality of program faculty. Include a summary list of **faculty with appointment type, terminal degree title and field, academic title/rank, status (full-time, part-time, adjunct) and the course(s) each faulty member will teach in the proposed program.**

One (1) new faculty line has been allocated to support the proposed BSME degree program by the HBCU settlement fund. Furthermore, the existing faculty in the engineering program will also be able to provide needed expertise to support partially the teaching of courses. There are four (4) full-time engineering faculty qualified to teach the mechanical engineering core and elective courses cross-listed in the proposed BSME curriculum and the existing general engineering curriculum.

Existing four (4) faculty with expertise in Mechanical/Aerospace Engineering are listed below:

Dr. Payam Matin, **Professor**. He received his Ph.D. in Mechanical Engineering from Oakland University, Rochester, Michigan. His research has been in the areas of computational mechanics and experimental mechanics with applications in solid mechanics, structural design, plasticity, and sheet metal forming, drone design, etc.

Abhijit Nagchaudhuri, **Professor**. He received his Ph.D. degree in Mechanical Engineering from Duke University. His teaching and research area is in the fields of robotics and mechatronics, remote sensing and precision agriculture, and biofuels and renewable energy.

Dr. Lanju Mei, **Associate Professor**. She received her Ph.D. degree in Aerospace and Mechanical Engineering from Old Dominion University. Her primary research interests include MEMS sensor, additive manufacturing, and computational fluid dynamics.

Dr. Aaron Persad, **Assistant Professor**. He received his Ph.D. degree in Mechanical Engineering from the University of Toronto. Prior to joining UMES, he was with Massachusetts Institute of Technology. His research is in space sciences, specifically focusing on bioastronautics (human-tended research and space suits), low-gravity experiments and payload development, non-equilibrium statistical thermodynamics (such as quantum mechanics to describe bulk-scale phase-change processes), and nanotechnology.

Furthermore, a new full-time tenure-track faculty member in mechanical engineering is expected to be recruited to assist the program. To further demonstrate the qualification and the role of the faculty in delivering the instructions of the BSME program, we list the individual faculty members and the major courses (code with ME or AE) that align with their expertise:

ME/AE major or elective courses	**Matin**	**Nagchaudhuri**	**Mei**	**Persad**	**New Faculty (expected)**
ENME 325	X		X	X	
ENME 342			X	X	

ENME 345		X	X		
ENME 346			X	X	
ENME 347			X	X	
ENME 363	X				X
ENME 365		X			
ENME 422		X			
ENAE 420			X	X	
ENME 425	X				
ENME 430	X				
ENME 440				X	
ENME 462	X	X			
ENME 442				X	
ENAE 467			X		
ENME 470	X				X
ENME 468		X			

2. **Demonstrate how the institution will provide ongoing pedagogy training for faculty in evidenced-based best practices, including training in:**

    a) Pedagogy that meets the needs of the students

    b) The learning management system

(a) and (b): Faculty support for the development and instruction of courses is provided by the Center for Teaching Excellence at UMES. The department also supports faculty professional development for attending conferences such as American Society of Mechanical Engineers (ASME) and ASEE (American Society of Engineering Education) for pedagogy training in engineering education, as well as ABET Symposium for continuous improvement.

Canvas LMS is the current learning management system utilized by UMES throughout the campus. Canvas represents an important development in improving the student experience at UMES, providing valuable new tools for our faculty and supporting students in an impressive digital environment. For faculty, the Center for Instructional Technology & Online Learning (CITOL) https://wwwcp.umes.edu/citol/ supports the development, design, and delivery of online and hybrid programs, classes, and workshops with a focus on flexibility, resiliency, equity, accessibility, privacy, and safety (FREAPS). CITOL assists faculty, staff, and students in all aspects of digital teaching and learning concerning pedagogy and technology. This includes the use of the Canvas Learning Management System, YuJa, etc.

d) Evidenced-based best practices for distance education, if distance education is offered.

Not applicable.

J. Adequacy of Library Resources (as outlined in COMAR 13B.02.03.12)**.**

1. Describe the library resources available and/or the measures to be taken to ensure resources are adequate to support the proposed program.

The University assures that institutional library resources meet the new program needs. For the proposed degree program, typically library resources include textbooks, reference books and technical papers. Although UMES does not have the ASME Digital Collection, the IEEE Digital Library IEEE Explore, the technical papers could be accessed through the Inter-Library Loan (ILL) services.

K. Adequacy of Physical Facilities, Infrastructure and Instructional Equipment (as outlined **in COMAR 13B.02.03.13)**

1. Provide an assurance that physical facilities, infrastructure and instruction equipment are adequate to initiate the program, particularly as related to spaces for classrooms, staff and faculty offices, and laboratories for studies in the technologies and sciences.

The UMES department of Engineering and Aviation Sciences is housed in the Engineering and Aviation Science Complex, a 166,000 square feet facility that houses more than 20 engineering laboratories. They include Robotics Lab, Fluid/Thermal lab, Materials lab, Aerospace lab, Electronics Lab, Circuits Lab, Micro-Electro-Mechanical Systems (MEMS) Lab with a Clean Room (ISO Class 5, 6 and 7), Control System Lab, and Embedded System Lab, Fluid and Thermal Lab, Microwave Chamber, CAD/VLSI Lab, High Bay Area, and Multiple Computer Labs, etc. These labs can support majority of the activities in the new courses and research activities. A complete list of engineering labs with brief descriptions is shown by the link:

https://wwwcp.umes.edu/engineering/engineering-laboratories/

All engineering faculty and staff have individual offices that will facilitate student advising, office hours, etc. Sufficient classrooms are available also in the same building, which makes it very convenient for students to take classes and conduct laboratory experiments.

2. Provide assurance and any appropriate evidence that the institution will ensure students enrolled in and faculty teaching in distance education will have adequate access to:

a) An institutional electronic mailing system, and

b) A learning management system that provides the necessary technological support for distance education

(a) and (b): Faculty support for the development and instruction is provided by the Information Technology Department and Academic Computing Unit professionals. Consultation is available for issues such as instructional design, software development, educational research, etc. These technologies and opportunities ensure students enrolled in and faculty teaching have adequate access to leaning resources.

Canvas LMS is the current learning management system utilized by UMES throughout the campus. For faculty, the Center for Instructional Technology & Online Learning (CITOL) https://wwwcp.umes.edu/citol/ supports the development, design, and delivery of online and hybrid programs, classes, and workshops with a focus on flexibility, resiliency, equity, accessibility, privacy, and safety (FREAPS). CITOL assists faculty, staff, and students in all aspects of digital teaching and learning concerning pedagogy and technology. This includes the use of the Canvas Learning Management System, Echo360, Google Workspace, Respondus 4.0, and Respondus LockDown Browser.

L. Adequacy of Financial Resources with Documentation (as outlined in COMAR 13B.02.03.14)

1. Complete Table 1: Resources and Narrative Rationale. Provide finance data for the first five years of program implementation. Enter figures into each cell and provide a total for each year. Also provide a narrative rationale for each resource category. If resources have been or will be reallocated to support the proposed program, briefly discuss the sources of those funds.

TABLE 1: RESOURCES					
Resources Categories	(Year 1)	(Year 2)	(Year 3)	(Year 4)	(Year 5)
1. Reallocated Funds[1]	$0.00	$0.00	$0.00	$0.00	$0.00
2. Tuition/Fee Revenue[2] (c+g below)	$139,068.00	$275,400.00	$411,730.00	$548,064.00	$694,396.00
a. # FT Students	15	30	45	60	75
b. # Annual Tuition/Fee	$8,724.00	$8,724.00	$8,724.00	$8,724.00	$8,724.00

Rate					
c. Annual / Full Time Revenue (a x b)	$130,860.00	$261,720.00	$392,580.00	$523,440.00	$654,300.00
d. # PT Students	3	5	7	9	11
e. Credit Hour Rate	$228.00	$228.00	$228.00	$228.00	$228.00
f. Annual Credit Hours	12	12	12	12	12
g. Total Part Time Revenue (d x e x f)	$8,208.00	$13,680.00	$19,150.00	$24,624.00	$30,096.00
3. Grants, Contracts & Other External Sources[3]	$0.00	$0.00	$0.00	$0.00	$0.00
4. Other Sources	$0.00	$0.00	$0.00	$0.00	$0.00
TOTAL (Add 1 - 4)	$139,068.00	$275,400.00	$411,730.00	$548,064.00	$694,396.00

2. Complete Table 2: Program Expenditures and Narrative Rationale. Provide finance data for the first five years of program implementation. Enter figures into each cell and provide a total for each year. Also provide a narrative rationale for each expenditure category.

TABLE 2: EXPENDITURES					
Expenditure Categories	(Year 1)	(Year 2)	(Year 3)	(Year 4)	(Year 5)
1. Total Faculty Expenses (b + c below)	128,000	128,000	128,000	128,000	128,000
a. # FTE	1	1	1	1	1
b. Total Salary	97,000	97,000	97,000	97,000	97,000
c. Total Benefits	31,000	31,000	31,000	31,000	31,000
2. Total Administrative	0	0	0	0	0

Staff Expenses (b + c) below					
a. # FTE	0	0	0	0	0
b. Total Salary	0	0	0	0	0
c. Total Benefits	0	0	0	0	0
3. Total Support Staff Expenses (b + c below)	79,200	79,200	79,200	79,200	79,200
a. # FTE	1	1	1	1	1
b. Total Salary	60,000	60,000	60,000	60,000	60,000
c. Total Benefits	19,200	19,200	19,200	19,200	19,200
4. Equipment	0	0	0	0	0
5. Library	0	0	0	0	0
6. New or Renovated Space	0	0	0	0	0
7. Other Expenses	50,000	0	0	0	0
TOTAL (Add 1 - 7)	257,200	207,200	207,200	207,200	207,200

Narrative Rationale for Table 1: Resources

1. Reallocated Funds
   No funds will be reallocated from existing programs.

2. Tuition and Fee Revenue
   We assume that tuition and fees will remain unchanged for the next five years. The annual in-state tuition rate is $8724 for full time students. For part-time students, the credit hour rate is $228/credit. The two values were used in calculating the revenue for full-time students and 6 credits per semester (i.e., 12 credit per year) for part-time students.

3. Grants and Contracts
   No additional sources of funding are expected currently.

4. Other Sources
   No additional sources of funding are expected currently.

5. Total Year: 5-year estimate is provided.

Narrative Rationale for Table 2: Expenditures

1. Faculty (# FTE, Salary and Benefits)

   One (1) new full-time tenure-track faculty member with terminal degree in mechanical engineering or a closely related field is required to support the proposed Bachelor of Science in Mechanical Engineering Program. The search for an open position has begun. The rate of fringe benefits is 32% per year for full time faculty.

2. Support Staff (# FTE, Salary and Benefits)
   One (1) Engineering Lab (Machine) Specialist is requested to support the operation of the laboratories in the Engineering and Aviation Science Complex building.

3. Equipment
   Not requested.

4. Library
   Minimal funds are needed to purchase additional engineering textbooks.

5. New and/or Renovated Space
   Not needed

6. Other Expenses
   $50,000 Startup Package for each new hire at the rate of $50,000 per person. A total of $50,000 is requested. The startup package is to support new faculty, especially at the assistant professor level, for professional development, including developing proposals for grants and contracts, travel and supplies for specialized engineering labs.

M. Adequacy of Provisions for Evaluation of Program (as outlined in COMAR 13B.02.03.15).

1. **Discuss procedures for evaluating courses, faculty and student learning outcomes.**
2. **Explain how the institution will evaluate the proposed program's educational effectiveness, including assessments of student learning outcomes, student retention, student and faculty satisfaction, and cost-effectiveness.**

1 and 2:

UMES has a comprehensive course and program evaluation process. Each course syllabus has a set of written student learning outcomes. The course learning outcomes are assessed through embedded questions on tests, assignments and portfolios that address specific course outcomes. Data is collected and analyzed, and results are used to improve course curriculum and pedagogy.

Once the program is launched, its courses will enter the course evaluation system. Teaching evaluations ask students to reflect on the course structure, the course content, and the instructor's performance. Summary data will be reviewed by faculty members, the program chair, and the school administration to determine whether revision or improvement actions are necessary.

In addition, every faculty is evaluated each year. The evaluation process includes an assessment of faculty teaching, faculty research record and productivity, and school-wide and department service. To receive a meritorious evaluation, a faculty member must demonstrate effective teaching, active scholarly activities and publication, etc. There is also a provision for the administration to develop an improvement plan for faculty members who have not done well in teaching. Tenured faculty will undergo a five-year post-tenure review.

Periodic academic program review takes place in a cycle of every seven years. Data regarding program enrollment, retention and graduation rates are collected by the Office of Decision Science and Visualization in conjunction with the program coordinator. The data are analyzed against program outcomes and results are used to improve the program.

The program accreditation comprehensive review takes place every six years per ABET criteria. The assessment, evaluation, and continuous improvement are integral parts of faculty teaching and performance evaluation.

N. Consistency with the State's Minority Student Achievement Goals (as outlined in COMAR 13B.02.03.05).

1. Discuss how the proposed program addresses minority student access & success, and the institution's cultural diversity goals and initiatives.

UMES mission is compatible with the State of Maryland's minority achievement goals. UMES is an 1890 land grant HBCU. Our programs attracts a diverse set of students with the majority of student population being African American and those who are multiethnic and multicultural. The University actively recruits minority populations for all undergraduate and graduate level degrees. Special attention is also provided to recruit females into the STEM and multidisciplinary programs at all degree levels – undergraduate, Master's, and doctoral. The same attention will be given to the proposed B.S. degree program in mechanical engineering.

O. Relationship to Low Productivity Programs Identified by the Commission:

1. If the proposed program is directly related to an identified low productivity program, discuss how the fiscal resources (including faculty, administration, library resources and general operating expenses) may be redistributed to this program.

The proposed program has no relationship to low productivity programs.

P. Adequacy of Distance Education Programs (as outlined in COMAR 13B.02.03.22)

1. **Provide affirmation and any appropriate evidence that the institution is eligible to provide Distance Education.**
2. **Provide assurance and any appropriate evidence that the institution complies with the C-RAC guidelines, particularly as it relates to the proposed program.**

Not applicable. The proposed program is not a distance education program.

TOPIC: Results of Periodic Reviews of Academic Programs, 2023-24

COMMITTEE: Education Policy and Student Life and Safety

DATE OF COMMITTEE MEETING: April 3, 2025

SUMMARY: At its meeting in June 2003, the Board of Regents delegated to the Chancellor the authority to approve institutional reports on the review of existing academic programs. Existing academic programs are required to submit a report every seven years. Each USM institution follows a review process that was approved previously by the Regents. A format for the reports is standardized and includes information on enrollments and degrees awarded, internal and external reviews, and institutional recommendations and actions.

The periodic program review process includes an internal self-study that is conducted by the program the academic year before the summary report is submitted to USM. The self-study is reviewed by external reviewers who then submit a report that becomes a part of the draft full periodic program review report. The respective dean for the program and the provost review the draft full report prior to submission of material to USM.

Drafts of each report are reviewed by staff in the USM Office of the Senior Vice Chancellor for Academic and Student Affairs, and any questions or requests are shared with the institutions for appropriate action prior to final submission to the Chancellor. These requests may be for additional information or for additional action following program accreditation reviews.

The reports demonstrate the seriousness with which the reviews are taken. Institutional action plans are decided upon primarily by the provost or dean, both of whom are responsible to monitor academic quality and use of resources. The following narratives and data tables provide information on enrollment and degrees awarded during the five years prior to the report submission. Copies of the complete program review summaries are available from the USM Office of Academic and Student Affairs.

ALTERNATIVE(S): This is an information item.

FISCAL IMPACT: This is an information item.

CHANCELLOR'S RECOMMENDATION: This is an information item.

COMMITTEE RECOMMENDATION: Information Only	**DATE**: April 3, 2025
BOARD ACTION:	**DATE**:
SUBMITTED BY: Alison Wrynn 301-445-1992	**EMAIL**: awrynn@usmd.edu

AY 2023-24 Periodic Review of Academic Programs Summary

Existing academic programs are required to submit a report at least once every seven years. A format for the reports is standardized and includes information on enrollments and degrees awarded, internal and external reviews, and institutional recommendations and actions. Drafts of each report are reviewed by staff in the USM Office of the Senior Vice Chancellor for Academic and Student Affairs, and any special comments for action are shared prior to final submission to the Chancellor. A total of 162 academic programs were reviewed during the 2023-2024 period program review period. The total number of programs reviewed by year can easily vary by double-digit percentage points from year to year, in either direction, without there necessarily being a meaningful pattern.

While the initial schedules of program reviews had symmetry across years, over time, there have been changes tied to when accreditation visits take place or there are individual circumstances that merit a delay (e.g., a program director changes around the time of self-study). Consequently, there may be years when an institution has many programs and years when there are few. Institutions may opt to have a review cycle that is less seven years for one or more programs if that aligns better with internal assessment schedules or accreditation visits.

The enrollment and information system processes for certificates that are undertaken while a student is also pursuing a degree make it difficult to ascertain precise enrollment in a certificate. USM and institutions have accurate data for certificate completions, but students may take courses toward a certificate that also count for a degree and not apply for certificate admission until the certificate is partly or even completely done. For that reason, some institutions have not indicated certificate enrollment because they recognize that it is difficult to achieve a fully accurate number. Similarly, it is also possible for us to see more completions of certificates than we have seen for the enrollment numbers.

Number of Programs Reviewed

Associate Degrees[1]:	0	
Bachelor's:	66	(with BA/BS options treated as one program; BFA, BMus. distinct)
Master's:	49	
Doctorates:	23	
Certificates:	24 (includes both stand-alone and stackable certificates)	

[1] The University of Maryland Global Campus is the single USM institution approved by the Maryland Higher Education Commission (MHEC) to offer the associate degree.

Results of Program Accreditation Reviews

Specialized accreditation may be available to individual programs or to groups of programs in departments or schools. Not all programs have such an option available to them. This kind of designation is usually associated with professional programs rather than liberal arts programs. Specialized accreditation in general requires documentation of continuous improvement toward clear program and student achievement outcomes, and standards may be related to the licensure of professionals. Of the 162 programs reviewed for this cycle, 59 have specialized accreditation through the program or school. (This count considers BA and BS options as one program; MHEC has recently required different HEGIS codes for BA and BS options, but that decision does not affect the programs reviewed in this cycle. Certificates, even if stackable, are included in the count.) Some programs may have more than one specialized accreditation, such as certain education programs. Other programs are preparing to seek specialized accreditation in coming years.

Frostburg State University

The BS in Exercise and Sports Science has maintained accreditation from the Committee on Accreditation for the Exercise Sciences, which is a division of the Commission on Accreditation of Allied Health Education Programs. Program enrollment has increased 24% over the past five years and facilities are very good. The program will develop specializations as part of updating its curriculum, hiring as appropriate. The advisory board will be expanded, and the program will work in a more transdisciplinary way to expand both experiential learning and the program footprint in the community.

The BA in Music self-study was conducted in alignment with the standards of the National Association of Schools of Music (NASM) to prepare for initial accreditation, and the action plan is aligned with those standards as recommended by the NASM visit team. Curriculum updates will be the initial action plan, including applying for a Bachelor of Music degree with concentrations in Performance, Industry and Music Education, and major modifications to the BA/BS Music Studies Liberal Arts degree in music. Administrative changes will include improved record-keeping practices, development of a student leadership board, clarification of policies, and improved monitoring of upper-division courses. The creation of a strategic plan to increase operating budget is vital for the sustainability of the music program to allow for instrument purchases, professional development and recruitment. Facilities will work with the program on HVAC needs in the performance area. Increased recruiting activities will also be a focus for the immediate future.

Most of Frostburg's RN to BSN enrollment comes from dual enrollment associate-to-bachelor's agreements with 11 community colleges across the state. This has kept enrollment steady though statewide many initiatives have already moved practicing RNs to a BSN. Students and evaluators praise program flexibility, faculty support, program convenience, and educational quality. The program curriculum is being redesigned to align with updated Commission on Collegiate Nursing Education (CCNE) accreditation and national standards, including the adopting the American Association of Colleges of Nursing's (AACN) recommendations for new domains and competencies. The institution will also evaluate non-program prerequisites and general education as online students have limited opportunity to complete these degree requirements. Onboarding will be assessed with a survey that addresses admission, financial aid, term activation, and orientation.

Towson University

The BA/BS in Molecular Biology, Biochemistry, and Bioinformatics has been reaccredited for a full seven years by the American Society for Biochemistry and Molecular Biology (ASBMB). Follow-up on recommendations for continuous improvement include coordinating with TU admissions; better preparing students for the ASBMB certification exam with regular exam preparation sessions held annually, with adjustments made based on success rates and feedback; for faculty safety training, annual training through SafeColleges/Vector Solutions will be mandated, with completion tracked and audited, alongside a review of lab safety incident reports to assess the program's effectiveness. The expansion of lab safety training to other disciplines will also begin, with a phased rollout.

Numerous programs have recently been reviewed and reaccredited by the Council of Accreditation of Educator Preparation (CAEP). Within that larger group, several programs also sought and received recognition from specialized accreditation programs (SPA) as noted below. Towson had a successful CAEP visit, with some programs cited for national recognition. No program-specific issues were highlighted by CAEP during the accreditation team's visit, but the accreditation report noted the following recommendations in relation to all accredited graduate programs in the College of Education leading to advanced licensure: data quality – enhance documentation of the validity and reliability of each of the key assessments by providing evidence that the Quality Assurance

System relied on verifiable, representative, cumulative, and actionable measures that ensured interpretations of data were valid and consistent; stakeholder involvement - provide more evidence of external partner involvement in program design, evaluation, and continuous improvement processes; and continuous improvement – provide more evidence of regular, systematic, and continuously assessed performance against goals and relevant standards, tracked results over time, documented modifications and/or innovations and their effects on outcomes. The programs included in the CAEP accreditation are as follows; notes indicate their additional SPA status:

- *BA/BS, MAT (track) Early Childhood Education – CAEP and National Association for the Education of Young Children (NAEYC) – Recommendations from the prior review were implemented. A recommendation from NAEYC was to more specially align the Praxis II data with key elements from the NAEYC standards, if possible.*
- *BA/BS, MAT (track) Elementary Education (CAEP) – The program met all standards and has worked to mitigate post-Covid enrollment dips seen nationwide. There is a four-part action plan that will look at curriculum and assessment tied to new Maryland regulations (in place and coming), explore recruitment, retention, and student growth strategies with local populations and those at a distance (e.g., at USM at Southern Maryland/online MAT option), and faculty will review courses and as needed propose new curriculum design and instructional methods to better meet the college's mission and vision statement.*
- *BA/BS, MAT (track) Special Education – CAEP and Council for Exceptional Children (CEC) – Actions are begin taken to address declining enrollments in the undergraduate major (para-educator pathways, exploring other partnerships). The MAT Special Education concentration is exploring additional advising support for the enrollment increase, as well as more faculty support for online instruction. The department will also address the unique needs of on-the-job interns in distant locations participating in the practicum experiences.*
- *BA/BS Early Childhood/Special Education (CAEP and CEC) - The program will increase recruiting to encourage completion of a 2+2 program in education; faculty have also developed a new pathway to certification that allows full-time childcare workers in Maryland to earn a degree while remaining employed. Faculty are redesigning each course to meet hybrid instructional delivery standards established by the Faculty Academic Center of Excellence at Towson (FACET) to ensure consistency across delivery mode.*
- *BA/BS Elementary Education/Special Education (CAEP and CEC) - Enrollments in the EESE program have decreased since the COVID-19 pandemic; initiatives to recruit students are underway. Offering part-time and paraprofessional-pathway options have led to increased diversity in recruitment.*
- *BA/BS Middle School Education – CAEP and Association of Middle Level Education (AMLE) - The department will focus on revising/reconceptualizing the program to meet new Maryland State Department of Education (MSDE) requirements and improve program viability. The chair has started conversations with content area leads and colleagues from other departments across campus. The department will address the increased demand for multi-language learners through the utilization of a "grow your own" (GYO) MLL specialist who will help faculty infuse MLL information into both coursework and fieldwork.*
- *M.Ed. Reading Education and embedded PBC Teaching English Learners –The program was largely successful in meeting the 28 International Literacy Association Standards for Professional Practice over the reporting period. Nearly all aggregated annual scores averaged above 90% for the eight (8) key assessments that capture the 28 standards. The self-study identified recommendations for improvements to two courses.*

- *BS Earth-Space Science – CAEP and National Science Teachers Association accreditation. In addition to the science courses, students completing the Secondary Education concentration take several education courses culminating in a capstone internship experience in which they teach eight weeks at the middle school level and eight weeks at the high school level. The program is small, consistent with national trends.*
- *MS Instructional Technology/School Library Media – The program was nationally recognized with no conditions by its specialized professional association, the American Library Association (ALA)/American Association of School Librarians (AASL), in 2019. The School Library Media (SLM) concentration is one of three concentrations within the MS in Instructional Technology program. Since the coursework in the SLM concentration leads to state licensure, the SLM concentration is reviewed as part of CAEP accreditation, whereas the other two concentrations do not lead to licensure and are not reviewed as part of CAEP accreditation. Upon successful completion of this concentration, candidates earn Maryland State Department of Education (MSDE) library media specialist certification. The curriculum aligns with AASL standards.*
- *BA/BS, MEd Art Education CAEP – The reviewer praised the program and its adaptability during Covid. Future plans to be discussed further by faculty and administration include creating a strategic plan; advocating for a faculty line; launching an Art Education concentration within the MAT; developing MEd electives focused on technology; adding a culturally responsive assessment to the MEd; collaborating more with the Community Arts Center on experiential learning; reducing the five-year BS/BA program to four years and implementing the following programmatic changes, which will help address workforce demands for highly qualified teachers and mandates in the Blueprint for Maryland's Future: include courses/assignments that focus on historical perspectives in art education, social emotional learning, and culturally relevant pedagogy; revise studio requirements to allow for more electives to encourage depth in candidates' artistic practice; and increase practicum days in the bachelor's program prior to the final full-time internship by adding experiences to existing courses and beginning the program a semester earlier.*
- *Transformational Educational Leadership (MS, 36 credits); Action Research for School Improvement (PBC); Educational Administrator I (PBC, 18 credits); Organizational Change (CAS, 30 credits) – CAEP - The MS and the PBC in Educational Administrator I programs were also recognized by the National Educational Leadership Preparation in 2020. These are programs for working educators seeking Maryland State Department of Education (MSDE)-approved Administrator I certification, with each available in a variety of delivery formats (synchronous, asynchronous, in-district face-to-face). Enrollment has declined, with the exception of the PBC in Educational Administrator I. The MS enrollment is likely impacted by the Blueprint for Maryland's Future prioritizing of National Board Certification over master's degrees, both for career advancement and for salary increase. With the addition of the Educational Administrator I PBC in 2020, the number of graduates from this program has increased dramatically in the past two years. PBC graduation numbers should remain steady as Maryland Blueprint and COMAR legislation continue to require the Administrator I credential for educators pursuing leadership positions in public schools and districts. An action plan is in place.*
- *The Bachelor of Music (BM), the Bachelor of Science (BS) in Music, the Master of Music (MM) Pedagogy, and the Post-Baccalaureate Certificate (PBC) in Music programs in music have specialized accreditation through the National Association of Schools of Music (NASM). In addition, the BS and MS in Music Education are recognized by both NASM and*

CAEP. The programs were successfully reaccredited by both. A PBC in Music Therapy has just been approved and is moving through the NASM stages of approval. The decennial NASM team visit resulted in some actions being required, and those are being implemented (additional staff member, more notifications around hearing health, clarification of certain items on the web and in the catalog, collaborative piano support, and additional soundproofing and sound attenuation actions). The Blueprint for Maryland's Future could have a significant impact on curricular requirements for undergraduate programs and bring decreases to graduate programs as the master's degree gives way to National Board Certification as a means to recertification and salary advancement. The Covid-19 pandemic brought decreases to both music performance and education programs nationally, so strategies for recruitment and adding a music education option to the MAT are under review.

- *MEd in Early Childhood Education -The MEd is an online program designed exclusively for already certified teachers and therefore not part of CAEP, which certifies initial licensure programs, The program's students consistently meet or exceed expectations on yearly measures of student learning outcomes aligned with the 2010 National Association for the Education of Young Children (NAEYC) Standards. The department plans to reevaluate the ECED M.Ed. curriculum and assessment plan to realign with the 2020 NAEYC Standards and competencies. The program will also offer a new thesis option for degree completion for students who display interest in research and/or those who wish to continue their education at the doctoral level.*

University of Maryland, Baltimore

The MS in Genetic Counseling was reaccredited by the Accreditation Council for Genetic Counseling. The program has had intentional growth and incorporated numerous suggestions from the last self-study (greater percentage of an FTE for program direction and directing student research), secured private funding for scholarships, and continued to update the curriculum to reflect changes in the field). The program has strong interdisciplinary and clinical elements and adapted to the many challenges from the Covid-19 pandemic. A continued challenge is the departure of academic faculty. Recommendations being incorporated now are mapping all syllabi to practice-based standards; ensuring faculty competency with the needs of diverse communities; providing the director with more time to address program needs, which requires less clinical load; and modifying the student grievance process.

The UMB School of Medicine, the first US public medical school, is ranked 9th for research among publics. The MD is accredited by the American Medical Association through the Liaison Committee on Medical Education (LCME). In the spring 2024 visit, the LCME approved full reaccreditation for 8 years, with a status report to be filed in 2026 related to curricular assessment, strategic plan, bylaws, and certain elements of the student experience (e.g., facilities for storage, relaxation etc.). The Biannual Medical Education Survey has been instituted to comprehensively assess the effectiveness and student satisfaction with the medical education program and SOM/Campus services available to medical students. This survey, which is administered and analyzed by students, parallels the LCME survey requirement for the self-study process and will allow for better monitoring and analysis in interim years. This survey is part of the recently implemented Data Management Plan, which includes many internal and external surveys and data points relating to the education program and student experience. This process will ensure continued compliance.

University of Maryland, Baltimore County (UMBC)

Several undergraduate programs in this cycle were reaccredited in August 2024 by the Accreditation Board for Engineering and Technology or ABET: BS Chemical Engineering, BS Computer Science, BS Computer Engineering, and BS Mechanical Engineering.

- *The BS in Chemical Engineering external review was conducted by the ABET Accreditation Commission using program criteria for Chemical, Biochemical, Biomolecular and Similarly Named Engineering Programs. ABET audits programs using eight criteria. The faculty have amended the student learning outcomes so they fully align with ABET wording, which will simplify future assessment. The program will seek to add a full-time program director to assist with increasing enrollment, as well as adding related content to the required first-year and transfer student seminars.*
- *The BS in Computer Science is available at the main campus and Shady Grove. The BS in Computer Engineering (Computer Science Electrical Engineering or CSEE) program updated its program website and implemented a system for the Course Assessment Committee to better archive faculty responses. CSEE is also developing a required three-credit, 300-level course to meet a forthcoming ABET directive. It will cover security, information networks, and parallel and distributed computing. Two additional lecturers will be hired to support seven sections per semester and to ensure the course's quality and effectiveness. CSEE will also hire an additional technician to support its teaching labs.*
- *Since the last accreditation visit, the BS in Mechanical Engineering began operations at Shady Grove in addition to the main campus. Laboratory facilities at the main campus will be updated, and new assessment procedures with appropriate documentation have been instituted since the visit. Changes are underway regarding documenting discussions with the Industrial Advisory Board regarding program objectives, and there is discussion about some curriculum revision regarding chemistry and physics laboratory work.*

University of Maryland, College Park

The BS in Aerospace Engineering is accredited by ABET and offers a comprehensive curriculum specializing in aeronautical and astronautical engineering. The program is praised for integrating theoretical knowledge with hands-on experiences through design projects and competitions, fostering a culture of innovation and teamwork. Challenges persist in balancing traditional aerospace disciplines and emerging fields, such as autonomy and space systems, along with pressure from increased enrollments. New upper-division electives in emerging fields (e.g., autonomous systems, hypersonics, space exploration) will be offered through co-teaching with introductory graduate-level courses.

BS Nutrition and Food Science – the Dietetics track within the bachelor's degree program is accredited by the Accreditation Council for Education in Nutrition and Dietetics (ACEND). The self-study and review for this period were, however, of the department and the array of programs. Further comments appear in the section below.

The Master of Public Policy is accredited by the Network of Schools of Public Policy, Affairs, and Administration (NASPAA). The self-study and review for this period were, however, of the full School of Public Policy. Further comments appear in the institutional section below.

The University of Maryland School of Public Health undergoes accreditation review for the entire School by the Council on Education for Public Health (CEPH). The recent reaccreditation review determined that the school met with compliance on all standards. Six departments were included in the accreditation process: Kinesiology, Family Science, Epidemiology & Biostatistics, Behavior

and Community Health, Global and Environmental Health, and Health Policy & Management. These departments offer the 21 programs listed below. One of the review team's recommendations was to better link the relationship between the undergraduate programs experiential learning options to their learning outcomes. The School now has created a matrix that can be shared with students that helps them understand where in their coursework different competencies are developed. Enrollments and degree production are robust, except for the relatively new graduate program in Environmental Health Sciences. The Maryland Institute for Applied Environmental Health has now been reorganized into an academic unit named Global and Environmental Health. This structure facilitates faculty having tenure homes that better align with their disciplinary expertise. It is anticipated that the graduate programs will grow as a result.

- *BS, MS, PhD Family Science [MS/PhD not yet at 7-year mark]*
- *BS, MS, PhD Kinesiology*
- *BS Public Health Practice (enrollment noted includes double majors) (retitled from Behavioral and Community Health)*
- *BS Public Health Science*
- *Master of Public Health (MPH)*
- *Master of Health Administration (MHA)*
- *MS Couple and Family Therapy (also accredited by the Commission on Accreditation for Marriage and Family Therapy Education)*
- *MS and PhD Environmental Health Sciences [MS/PhD not yet at 7-year mark]*
- *PhD Behavioral and Community Health*
- *PhD Epidemiology*
- *PhD Health Services Research*
- *PhD Maternal and Child Health*
- *PhD Toxicology (with UMB, UMBC, and UMES)*
- *PBC Global Health*
- *PBC Principles of Public Health*
- *Graduate Certificate in Professional Studies (GCPS) Health Data Analysis (launched in 2023)*

University of Maryland Global Campus
The Master of Science in Health Information Management and Technology program received continuing accreditation for seven years from the comprehensive program review conducted by the Commission on Accreditation for Health Informatics and Information Management Education (CAHIIM) team. Overall, the program was recognized for its focus on quality, good communication with students, and satisfying a critical need for the region it serves. The team recommended allocating more resources for the portfolio director and faculty for program and course planning (workload considerations and call for additional collegiate faculty), considering using technology resources that would assist students in learning using various types of analytical software with tutorials, encouraging students to sit for professional credentials, particularly the Registered Health Information Administrator, and adapt standards to the 2026 CAHIIM standards, adjusting student assessments to include both formative and summative assessments.

Low Degree Productivity

MHEC Definition
Bachelor's: < 5 in most recent year or a total of 15 in last three years
Master's: < 2 in most recent year or a total of 6 in last three years

Doctorate: < 1 in most recent year or a total of 3 in last three years

By the aforementioned definition and without other context, two (2) programs are considered to demonstrate "low productivity." The types of programs identified in this report as low productivity are described below in more detail.

The following brief summaries highlight the strategies being undertaken by the identified programs to address low enrollment and the low number of degrees awarded.

Coppin State University

- *BS Mathematics – The program provides a liberal arts major with a focus on computer science. Computer science majors also need up to 21 credits in mathematics for their degree. The program courses support general education and other majors (STEM, education etc.). The program plans to update some courses, expand advising, and potentially develop a certificate specifically for those interested in secondary education. More generally, courses have enrollment even if the major itself has capacity to grow.*

Towson University

- *BS Earth-Space Science – This program has historically been a niche area with low enrollment. Enrollment in ESS is likely to remain low, but it remains a critical program for preparing highly qualified teachers.*

Bowie State University										
Program Title (Degree)	2019		2020		2021		2022		2023	
	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees
(B) History	78	14	83	24	74	18	80	13	61	26

Notes:

1. BA/BS History – Self-study showed high student satisfaction with career mentoring. External reviewers suggested trying to add more of their courses to the general education program and expanding partnerships with community colleges, government officials, and governmental organizations in metro DC. External reviewers also suggested developing more opportunities for exposure to first-year and other pre-major students.

Coppin State University										
Program Title (Degree)	2019		2020		2021		2022		2023	
	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees
(B) Computer Science	42	2	55	7	50	3	62	11	68	3
(C) Forensic Investigations	12	7	24	14	20	10	18	10	28	15
(B) Interdisciplinary Studies	83	16	62	16	26	5	26	10	31	33
(B) Mathematics	9	0	6	3	5	0	6	1	13	2

Notes:

1. BS Computer Science – The program participates in the IBM HBCU Quantum Center, which provides research and presentation opportunities. External review notes that graduates are very competitive in the market and for graduate school, but enrollment could benefit from stronger academic support and strategies for mathematics acceleration. Students have to take several mathematics courses. The faculty aspire to ABET/CSAB accreditation and so are amending the curriculum to align standards with the ACM/IEEE/AAAI 2023 Standards.
2. UDC Forensic Investigations – The program is available to students in any major who complete the biology, chemistry, and criminal justice prerequisites. Enrollment is steady, and improvement plans address recruiting faculty, adding new electives to keep the curriculum contemporary, enhancing technology and marketing, and continuing to partner with offices across the campus to raise awareness of the program and its career opportunities.
3. BS Interdisciplinary Studies – Enrollment had previously been inflated as the major was used as a default for pre-nursing, which was then, post-pandemic, adjusted to reflect only those intentionally enrolled in the major. Since the last review, a full-time faculty member was hired to coordinate the program, and the curriculum was revised, including moving the major credits from 49 to 39. Processes for course and specialization approval and graduation were simplified. More process streamlining is recommended, as well as an update to the website.
4. BS Mathematics – See above in low enrollment programs. Students in the program take several courses in the BS in Computer Science.

Frostburg State University										
Program Title (Degree)	2019		2020		2021		2022		2023	
	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees
(B) Criminal and Legal Studies	213	59	188	58	166	47	126	42	118	30
(B) Exercise and Sports Science	152	37	173	32	183	24	174	22	188	30
(B) Liberal Studies	60	71	77	52	73	64	85	59	65	67
(B) Music	47	16	42	4	49	8	58	11	56	9
(B) Nursing	438	160	425	142	385	139	326	139	373	107
(B) Political Science	71	17	62	18	47	18	39	19	29	10

Notes:

1. BS Criminal and Legal Studies – Though enrollment has dropped, it has diversified, and law school acceptances increased. The program was retitled from Law and Society, added philosophy courses, and will continue program revisions. Increased visibility for the program will be sought through a speaker series, media outreach, and more social interaction with student groups and alumni. Foundation assistance will be sought for fundraising.
2. BS Exercise and Sports Science – see above in programs with specialized accreditation
3. BS Liberal Studies – Program strengths include stable enrollment, joint ownership by faculty from across campus who contribute to the program's success, the economic efficiency created from utilizing existing courses in other disciplines, and the interdisciplinarity of its curriculum. The challenges identified were the location of the program within the new Academic Affairs structure and internal competition created by the new online Multidisciplinary Studies program. This relationship will be evaluated, assessment practices will be enhanced with entry and exit surveys, and there will be expanded internal collaboration with Career Services and the Majors Fair, among others. The advisory board will be expanded as well.
4. BS/BA Music – see above in programs with specialized accreditation
5. BS Nursing – see above in programs with specialized accreditation
6. BS Political Science – The program holds important general education courses (American Government, International Relations, Comparative Politics) and engages in experiential learning (e.g., Washington Model Organization of American States, Beall Institute for Public Affairs on campus). It has kept its offerings evolving to meet current disciplinary expectations, but several faculty retirements and post-Covid enrollment declines have created challenges with respect to offerings. A strategic enrollment plan for the program is being created, which will be tied to a five-year staffing plan to ensure program strength and efficiency. Further alumni engagement will also be sought.

Salisbury University										
Program Title (Degree)	2019		2020		2021		2022		2023	
	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees
(B) English	146	37	160	56	139	44	114	31	107	43
(M) English	21	14	26	18	37	18	20	25	12	7
(B) Philosophy	15	7	19	3	17	5	24	3	28	10

Notes:

1. BA English – Enrollments, as across the US, have dipped. Recruitment will be tied to the new EEQ (essential employability qualities) certification from QA Commons. The EEQ certification verifies the program fosters eight key career skills in high demand: communication skills, teamwork, critical thinking, creativity and problems solving, learning and adaptability, professionalism and responsibility, motivation and initiative, and digital literacy. The BA has 7 program tracks, including secondary education. The program has a large role in supporting the new general education program. The faculty will create an experiential learning course to support general education. Collaborating with the director of first-year writing and the writing center, the chair will continue to find ways to support first-year students. The department launched their First Year Seminars in the fall of 2024 and has created an Assessment Committee to create a sustainable assessment program. Efforts will continue to foster a sense of community among students and faculty, building on recent successful events.
2. MA English – The Blueprint for Maryland's Future has impacted enrollments, especially in the TESOL track. An accelerated MA program may help with enrollment, particularly for the TESOL track. TAs have a nationally competitive annual stipend (since 2023), which is an outstanding recruitment tool. MA students present at major professional conferences, are admitted to PhD programs, and consistently get jobs in secondary and post-secondary education. The program will Introduce a broad-based MA track allowing students to tailor their studies to their individual interests and career goals. With the creation of the Graduate School, the graduate program will have an opportunity to build a robust marketing a recruitment strategy and new web presence.
3. BA Philosophy – The program has EEQ certification (see above at English) and is largely focused on applied philosophy; it has a strong co-curriculars and community engagement. The minor is thriving and perhaps pulling away majors. The action plan is designed to enhance the department's academic offerings, support faculty and student needs, and strengthen the program's overall effectiveness and visibility. The department will create a comprehensive plan for sequencing and organizing our co-curricular programs. This plan aims to optimize student engagement, balance faculty workload, and improve program accessibility. There will also be strategic reassessment of staffing for popular courses and the new first-year seminars. Course-based assessments will take a more qualitative approach to better refine improvements.

Towson University										
Program Title (Degree)	2019		2020		2021		2022		2023	
	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees
(B)/(BFA) Art & Design	544	161	523	137	505	134	500	128	552	120
(B) Early Childhood Education	271	70	263	63	256	70	266	65	221	76
(MAT) Early Childhood Education Track	12	5	13	7	13	7	15	7	26	5
(MEd) Early Childhood Education	62	40	47	33	35	26	41	8	40	27
(B) Elementary Education	420	111	390	123	396	76	344	110	307	85
(MAT) Elementary Educatn. (track)	22	18	27	12	28	14	25	11	17	13
(B) Special Education	79	22	65	18	54	16	38	15	29	13
(MAT) Special Education (track)	48	24	91	7	75	25	101	25	148	34
(MEd) Reading Education	188	44	202	45	175	34	190	62	146	47
(C) Teaching English Learners (new)	2	N/A	9	17	5	4	5	7	12	4
(B) Art Education	62	24	71	18	75	13	65	25	65	13
(MEd) Art Education	29	4	27	6	22	8	15	11	22	3
(B) Family & Human Services	374	103	361	119	296	128	270	102	235	94
(M) Family Collaboration	29	13	31	17	36	13	35	16	32	15
(C) Family-Professional Collaboration	30	15	30	18	36	13	35	16	33	15
(B) Environmental Science and Studies	216	45	200	63	184	51	168	52	148	35
(M) Environmental Science	23	8	23	8	23	9	23	6	23	11
(B) Art History	31	11	31	6	31	5	25	9	30	8
(B) Earth-Space Science	8	3	7	3	14	1	13	0	9	3
(B) Early Childhood/Special Education	145	36	147	42	162	52	156	54	137	57
(B) Elementary Education/Special Education	254	84	248	99	233	97	195	93	151	92
(B) Geology	37	17	39	10	35	12	36	11	28	5
(B) Interdisciplinary Studies	62	25	69	17	50	17	43	28	51	20

Degree Codes: (B) Bachelor; (M) Master; (D) Doctorate; (BFA) Bachelor of Fine Arts; (BTS) Bachelor of Technical Studies; (BPS) Bachelor of Professional Studies; (UDC) Upper Division Certificate; (PBC) Post-Baccalaureate Certificate; (MAT) Master of Arts in Teaching; Master of Professional Studies (MPS); (PMC) Post-Master Certificate; (CAS) Certificate in Advanced Study.

(B) International Studies	174	49	143	44	118	36	80	32	66	36
(B) Molecular Biology, Biochemistry and Bioinformatics	176	35	184	39	152	40	148	35	131	40
(B) Middle School Education	41	12	46	8	52	8	41	14	36	12
(B) Physics	103	19	96	24	71	13	59	13	58	12
(B) Political Science	331	92	336	83	311	76	262	97	238	71
(B) Sociology-Anthropology	811	230	787	220	780	209	702	228	674	206
(BM), (BS) Music	153	22	159	31	153	29	139	38	142	34
(MM) Music	11	4	9	4	6	5	6	2	6	3
(C) Applied Music	2	n/a	2	1	4	0	2	6	5	0
(BS) Music Education	183	21	185	25	138	38	120	25	126	31
(MS) Music Education	12	7	16	3	22	3	19	6	21	5
(M) Transformational Educational Leadership	246	50	273	46	207	64	154	75	97	87
(C) Action Research for School Improvement	28	0	1	10	0	16	0	0	0	0
(C) Educational Administrator I	n/a	n/a	56	n/a	102	2	91	55	106	52
(CAS) Organizational Change	98	2	59	1	8	2	1	0	1	0
(MEd) Secondary Education	29	2	15	3	10	20	5	5	4	2
(MEd) Special Education	184	26	120	66	140	45	122	46	123	24
(MFA) Art Studio	24	4	25	5	23	9	23	5	21	7
(MM) Music Pedagogy	n/a	n/a	2	n/a	3	n/a	2	3	2	0
(MS) Applied Physics	13	4	19	6	15	12	10	7	14	7
(MS) Instructional Technology/Educational Technology Concentration	132	21	152	3	124	59	141	34	124	29
(MS) Instructional Technology/Instructional Design and Development Concentration	13	5	15	7	14	8	14	7	19	0
(C) Educational Technology	1	n/a	5	n/a	12	1	10	0	5	6
(C) Instructional Design & Development	6	n/a	4	1	2	4	7	3	8	3

(MS) Instructional Technology/School Library Media Concentration	200	45	178	43	154	19	156	60	102	19
(C) Design for User Experience (UX)	11	2	9	5	12	3	5	9	12	2
(PhD) Instructional Technology	31	3	31	1	33	1	40	1	43	2

Notes:

1. BA/BS/BFA Art & Design – Recommendations from the last review were implemented. For continuous improvement, the department will advocate for full-time faculty lines and support staff, such as a 2D and/or Digital technician and securing a permanent curatorial position to support the galleries. It will seek support for faculty research; develop co-curricular gallery connections throughout the program(s) to increase students' professional competencies; review curricula (particularly in the Design Studies track) to encourage cross-disciplinary inquiry and remain current with market needs; build alumni and inclusion networks; increase safety via studio ventilation and gallery cameras; and seek support for equipment updates.
2. BA/BS, MAT Early Childhood Education – see above at programs with specialized accreditation
3. MEd Early Childhood Education – see above at programs with specialized accreditation
4. BA/BS, MAT Elementary Education - see above at programs with specialized accreditation
5. BA/BS, MAT Special Education - see above at programs with specialized accreditation
6. BA/BS, MAT Art Education - see above at programs with specialized accreditation
7. BA/BS Family & Human Services, MS Family Collaboration, PBC Family-Professional Collaboration – The undergraduate program implemented recommendations from the last review, and the department name was changed to to Family Science, in alignment with the endorsement of the National Council of Family Relations (NCFR). This change increases visibility and better defines the identity of the department. The department will focus on recruiting and retaining undergraduates in Family and Human Services and re-incorporate FMST 201 Family Resources, the Core course with the highest enrollments, as a major requirement to more effectively market this major to prospective students. The department will provide a minor at TUNE and will continue to develop a Couples and Family Therapy master's program, with a fall 2026 target launch date. The TU Student Council on Family Relations (TUSCFR) will be re-started. The master's program in Child Life, Administration and Family Collaboration will continue to focus on meeting the Association of Child Life Professionals (ACLP)/Child Life Certifying Committees (CLCC) academic/clinical training requirements to best prepare students to meet the demands of the profession. Continued efforts to support students through the pre-internship match process and Internship application process will remain a prominent faculty focus. New faculty will continue to be mentored and strongly encouraged to attend college and university promotion, tenure, and reappointment (PTR) workshops and events.
8. BA/BS Environmental Science and Studies, MS Environmental Science – Although pandemic-era transfer admissions impacted enrollment, the program has steady recruitment and completions. The faculty come from other departments, and a new advisory board will be formed, plus a dedicated lecturer is planned. Work on building a stronger community for students by, for example, developing an introductory ENVS course that all new and transfer undergraduate ENVS students take. The program will also host several social activities a year to help build a sense of community among ENVS faculty and students. The program will create more opportunities for student research and internship via professional relationships and work with the TU Office of Graduate Studies to explore increased funding and space for graduate students.
9. BA/BS Art History – The program was praised for its reach, variety, and faculty research. The program's continuous improvement plan has nine steps: formalize mentorship of new faculty members; encourage all faculty members to partner with TU's Writing Center to bring trained peer reviewers into the classroom to assist students; streamline our course offerings to play to strengths; increase the range of offerings, particularly in Museum Studies,

and seek to expand our ranks of full-time faculty members; nurture closer relationships with the University Gallery for both students and faculty; enhance the Visual Resources Library as a study center and meeting place for our students and faculty; more actively promote the Cook Library's rich resources to students; seek to establish more-formal memoranda of understanding with local museums and to find funding for students to have paid internships in them; continue to build and benefit from our ever-expanding list of alumni.

10. BA/BS Earth-Space Science - see above at programs with specialized accreditation
11. BA/BS Early Childhood/Special Education - see above at programs with specialized accreditation
12. BA/BS Elementary/Special Education - see above at programs with specialized accreditation
13. BA/BS Geology – One of two UG geology programs in MD, it is planned to allow smooth transfer. The program is strong but has some capacity challenges due to large courses and a small faculty. The plan to be implemented includes a program vision statement, a plan for undergraduate research tied to faculty research productivity, incorporating Earth-Space Science as a concentration within the Geology program; exploring pathways for geoscience professors to have access to graduate students; build, expand, and improve on operations and efficiencies; and look at additional electives and experiences to expand enrollment.
14. BA/BS Interdisciplinary Studies – With four structured tracks and one available for self-design, the program offers many opportunities, but curricular complexity has created assessment challenges. Improvements will include making prerequisites explicit requirements, adding more biology electives to the Animal Behavior concentration, exploring the addition of an introductory and a capstone course and of new concentrations. The program will also work with Academic Advising, the Retention and Completion Office, the College of Liberal Arts Academic Advisor, the TU Career Center, and the TU Alumni Association to improve our advising guides, career guides, and connections to alumni.
15. BA International Studies – An interdisciplinary program that has faculty advisors guide students to pursue their career interests, all students have to have at least intermediate fluency in a non-English language. Like other programs with foreign language requirements, post-pandemic enrollment has dropped. The program's action plan will evaluate the costs and benefits of creating an introductory course and a capstone course; continue to gather data to better understand enrollment dips and use enrollment data findings to inform improved marketing materials and recruitment practices; create more comprehensive advising guides and more focused and comprehensive career guides; explore creating an alumni database, increasing faculty involvement, and creating a model diplomacy club.
16. BA/BS Molecular Biology, Biochemistry & Bioinformatics - see above at programs with specialized accreditation
17. BA/BS Middle School Education – see above at programs with specialized accreditation
18. BA/BS Physics – The program has strong enrollment and student results, as well as strong faculty research. Recommendations address setbacks from the pandemic: rebuild community and student retention (restart clubs, review advising); curriculum: modify Applied Physics concentration into Engineering Physics concentration; consider pairing and re-structuring parts of existing seminar courses to include suggested activities; devise mechanisms for majors from different class levels to interact and collaborate during common class meeting times; pursue recruitment efforts; enhance program efficiency (enhance transfer advising, scheduling etc.) think strategically: consult American Physical Society (APS) Effective Practices for Physics Programs (EP3) Guide and collaboratively choose at least two areas in which to make progress (possibly recruitment, retention, inclusiveness).
19. BA/BS Political Science – The program has strength in research, and the pandemic-era enrollment dips may be leveraged to transition to an R2 model. At the same time, the faculty will review the curriculum, particularly courses with large enrollments, to determine if adjustments can improve the program and attract more majors. The faculty will partner with other TU units to assess the role of AI, positive and negative, on the program.
20. BA/BS Sociology-Anthropology – This program has three concentrations: sociology, anthropology, and criminology, which has about 75% of the enrollment. The faculty are prioritizing the following action items from the self-study and external review: improve department climate/culture; develop

departmental advising system; continue advocating for a separate Criminal Justice major; document and clarify departmental procedures; review curriculum and modes of instruction. The first step of this action plan is to establish a department steering committee with representation from each rank of faculty (including lecturers and adjuncts). This committee will advise the chair, draft department by-laws, and continue to guide implementation.

21. BA/BM, MM Music, PBC Applied Music, BS, MS Music Education - see above at programs with specialized accreditation
22. MS Transformational Educational Leadership, PBC Action Research for School Improvement, PBC Educational Administrator, CAS Organizational Change - see above at programs with specialized accreditation
23. MEd Secondary Education - see above at programs with specialized accreditation
24. MEd Special Education - see above at programs with specialized accreditation
25. MFA Art Studio - The MFA in Art Studio program will attempt to increase enrollment of highly talented, engaged, and diverse students by focusing on three areas: (1) expand the innovative and interdisciplinary nature of the program via curriculum development, availability of new technologies for students, visiting artists; (2) Increase student engagement and profile with Baltimore/Washington, DC art spaces, curators, and critics via field trips, regular invitation of local curators and critics from the area, marketing: and once per semester MFA open studios; (3) increase alumni engagement via program events to foster networking opportunities and community-building and alumni-related exhibitions.
26. MM Music Pedagogy – see above at programs with specialized accreditation, but note this is a new program and is not yet in the 7-yearr review cycle
27. MS Applied Physics – The program has strong enrollment and results. Its action plan has five parts: (1) Curriculum Enhancement and Redesign (form a program advisory board; work to develop new courses; pursue opportunities for implementing interdisciplinary concentrations; implement research-intensive curriculum pathways; (2) Program Accessibility and Student Success (Identify and implement optimal course scheduling strategies and pilot online/hybrid courses to attract full-time employed students and facilitate their timely graduation; establish a balanced framework for course offerings to allow for a reasonable choice of electives over each two-year period; facilitate increased URM representation by availing external funding resources for student scholarships, student research, mentoring resources, and implementing community-building initiatives); (3) Assessment - Develop and implement exit interviews/surveys for graduating students and conduct alumni surveys; (4) Faculty and Support - pursue resources to increase the number of graduate assistantships, including research assistantships; pursue avenues for accounting research instruction in teaching workload and for rewarding student mentoring; (5) Infrastructure and Research Facilities - seek support for high-performance computing facilities, enhancing laboratory spaces, availing resources to support the maintenance and servicing of equipment used for research and graduate instruction.
28. MS Instructional Technology/Educational Technology Concentration, MS Instructional Technology/Instructional Design & Development Concentration, PBC Instructional Technology, PBC Instructional Design & Development, MS Instructional Technology/School Library Media Concentration – see above at programs with specialized accreditation
29. PBC Design for User Experience (UX) – An online, asynchronous program that has options for non-art and art majors as points of entry, the certificate is valuable for regional workforce needs. The action plan includes completing Quality Matters review for all courses, exploring partnerships with various master's to make this stackable, and increasing internal and external marketing.
30. PhD Instructional Technology – Since the last review, the program changed from an EdD to a PhD. Faculty and student research have been strong, application and enrollment strong compared to peers, and the curriculum has evolved with changing technologies and trends. Recommendations include developing a policy on the ethical use of AI, an expanded advisory board, continued monitoring of the curriculum, more interdisciplinary collaboration, and benchmarking with peers.

University of Baltimore										
Program Title (Degree)	2019		2020		2021		2022		2023	
	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees
(B) Digital Communication	86	33	61	21	46	19	37	11	35	7
(B) Human Services Administration	86	26	93	21	81	18	63	27	51	19
(M) Interaction Design & Information Architecture	21	5	26	6	30	8	23	2	27	6
(C) User Experience (UX) Design	5	5	5	7	6	7	9	9	7	7
(M) Negotiations and Conflict Management	61	15	48	19	32	11	27	18	28	9
(C) Digital Communications	7	2	7	0	6	5	5	1	5	2

Notes:

1. BA Digital Communication – The program offers on-campus and online courses, and reviewers focused on ways to gain visibility for the interdisciplinary program. The faculty are engaged in a curriculum update that adds more work in AI, social media, and mobile technologies, as well as providing stackable badges/credentials. Focus on having standards for technology fluency may assist transfer students.
2. BA Human Services Administration – The program is developing a strategic plan, working on material to highlight the accelerated BA-MA option, and updating expired articulation agreements to address declining enrollment. The faculty are reviewing the curriculum to take steps to secure specialized accreditation and working with faculty in other areas of the College of Public Affairs to explore additional degree tracks.
3. MS Interaction Design & Information Architecture, PBC User Experience (UX) Design – The MS and its stackable PBC are available in person and online, and graduates have landed positions with high-profile employers. Enrollment has been steady, but recruitment may benefit from a new Design at UBalt campaign, highlighting the educational experience of human-centered design, visual design, and web design. The faculty are updating courses to incorporate emerging technologies, including AI. The program will introduce an internship course to better prepare students for the job market. The program will also place a greater emphasis on public speaking, presentation, and prototyping skills.
4. MS Negotiations and Conflict Management – The oldest such program on the East Coast, the MS has a strong reputation both academically and in the community. Enrollment has dropped as the university's did, but the program's move to 36 credits (from 42), flexible scheduling designed for working professionals, and addition of an online option and a stackable credential can enhance recruitment. The program also partners with the Schaefer Center for Public Policy on the Urban Conflict Manager program. Reviewers' suggestions for additional intra-campus partnerships (e.g., offering undergraduate courses), for building more community across in-person and online cohorts, and moderating faculty workload are being considered.
5. PBC Digital Communication – The interdisciplinary PBC leverages courses across programs. External reviewers commented on several web issues' tie to recruitment, which a new university website should help address. The curriculum is being adjusted so it has more structure (e.g., one more required course), and graduates will have opportunities to clarify the specific skills achieved. Reviewers also recommended incorporating more curricular and co-curricular experiential learning opportunities (speakers, industry visits, hosting portfolio reviews). Alumni engagement is being used for assessment.

University of Maryland, Baltimore										
Program Title (Degree)	2019		2020		2021		2022		2023	
	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees
(M) Genetic Counseling	16	7	16	8	15	7	17	7	20	10
(M) Forensic Medicine	14	5	16	8	12	9	24	10	25	14
(D) Doctor of Medicine	629	163	622	167	602	155	587	148	590	139
(D) Nursing	39	9	39	6	34	3	37	8	37	5

Notes:

1. MS Genetic Counseling – see above for programs with accreditation review; the program has intentional growth and was reaccredited.
2. MS Forensic Medicine – This is the first and only program housed in a statewide medical examiner's office. The program has been able to have intentional growth and is a leading program in a medicolegal environment with courses taught be experienced forensic pathologists. This is its first self-study. Students' internships are tailored to their career goals. Additional funding options are sought for international students who cannot work during their education. Curriculum expansion is recommended, as well as academic credit options for internships.
3. MD Doctor of Medicine – see above for programs with accreditation review.
4. PhD Nursing – A strong program that has maintained enrollment while nationally enrollment declined 12%; the recommendation is to grow the program, which will also require more funding for student support. Curriculum revisions to support more real world data use have taken place and additional curriculum revisions are recommended, including more competency-based educational elements.

University of Maryland, Baltimore County										
Program Title (Degree)	2019		2020		2021		2022		2023	
	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees
(B) American Studies	20	8	21	8	12	5	11	9	12	2
(B) Ancient Studies	45	6	28	12	25	8	26	5	28	5
(B) Chemical Engineering	141	64	133	56	135	57	115	49	99	56
(B) Computer Engineering	202	64	170	84	150	68/	127	53	100	44
(B) Computer Science	770	206	836	250	889	281	879	323	856	332
(B) English	198	50	203	44	189	47	154	51	146	36
(M) Text, Technologies & Literature	14	5	13	3	9	4	10	3	8	4
(M/D) Gerontology	8	2	5	3	5	2	5	1	5	2
(B) Mathematics	107	37	117	37	104	29	80	19	49	25
(B) Mathematics	273	54	268	57	269	48	214	57	198	45
(B) Statistics	71	15	79	17	87	14	82	18	74	18
(M) Statistics	14	2	12	4	9	3	7	2	5	3
(M) Applied Mathematics	6	7	6	2	8	4	9	3	11	2
(D) Statistics	23	3	21	3	21	4	21	6	22	-
(D) Applied Mathematics	25	-	29	2	23	1	25	7	25	2
(B) Mechanical Engineering	375	143	378	120	375	148	388	101	364	111
(B) Physics	170	12	156	24	137	16	132	21	117	18
(B) Physics Education	6	-	6	-	1	-	1	2	3	-
(M) Atmospheric Physics	10	2	10	1	14	2	10	7	14	2
(M) Physics	17	8	8	10	12	5	14	2	17	3
(D) Atmospheric Physics	18	-	19	1	23	2	20	2	24	2
(D) Physics	35	4	30	1	32	5	27	5	28	6
(B) Political Science	306	84	317	81	332	83	301	87	285	71
(C) Public Administration & Policy	-	1	3	2	4	1	5	2	5	1
(C) Security Studies	-	-	-	-	7	2	10	7	10	5
(M) Systems Engineering	19	7	21	5	21	10	18	7	23	3

Degree Codes: (B) Bachelor; (M) Master; (D) Doctorate; (BFA) Bachelor of Fine Arts; (BTS) Bachelor of Technical Studies; (BPS) Bachelor of Professional Studies; (UDC) Upper Division Certificate; (PBC) Post-Baccalaureate Certificate; (MAT) Master of Arts in Teaching; Master of Professional Studies (MPS); (PMC) Post-Master Certificate; (CAS) Certificate in Advanced Study.

(C) Systems Engineering	4	4	9	4	3	3	1	2	10	-

Notes:

1. BA American Studies – The interdisciplinary program and its faculty play an important role in student civic engagement and the institution's Carnegie special classification. Enrollment in the major may grow through second majors, and faculty will develop and launch a revamped 100-level course to this end. The faculty will also transition the curriculum from a three-theme structure to a more flexible curriculum, offering greater course variety and frequency to meet student demands and showcase faculty expertise. This will also facilitate completion of the program as a second major.
2. BA Ancient Studies – Designed as a second major, its ancient language requirements may be a barrier to completion for double majors, but program size remains aligned with peers. The department will identify equipment and materials for purchase that improve artifact processing analysis and enable more intensive archaeological experimentation. The program will also add more upper-division ancient history courses and review progression.
3. BS Chemical Engineering, BS Computer Engineering – see above under programs with specialized accreditation (reaccredited by ABET)
4. BA English, MA Text, Technologies, and Literature – The programs have evolved their curricula, with the undergraduate program contributing to both the new Critical Disability Studies minor and minors in Public Humanities and Medieval and Early Modern Studies. Enrollment has been impacted by declining transfer numbers, and new concentrations in creative writing and professional writing may attract more students. The department is reviewing workload and hiring, mentoring practices, and other strategies related to its R1 status.
5. MS/PhD Gerontology – The MS/PhD is one of 6 in the US and the only one in the mid-Atlantic; it is offered in collaboration with the University of Maryland, Baltimore and benefits from top-tier researchers. To ensure stability and longevity, an MOU between the institutions will be completed. The action plan also includes more faculty resources, adding a dual-degree option and a biomedical aging track, streamlining certain curricular processes, expanded marketing, outreach to HBCUs to grow the pipeline, and expanding graduate funding for international students.
6. BA, BS Mathematics, BS Statistics, MS Statistics, MS Applied Mathematics, PhD Statistics, PhD Applied Mathematics – The department has many distinguished faculty and strong graduate programs appropriately evolved. The Covid era saw enrollment drops and preparation issues, which will be addressed via a new multi-modal placement system, the revamping of Math 100 and equivalent courses, and a request for a permanent Academic Coordinator to assist with developing and implementing active learning strategies. The department looks to build out new data science and biostatistics offerings. The department is mapping undergraduate courses and has already made changes to its graduate program based on past recommendations, with further reviews anticipated as new programming develops.
7. BS Mechanical Engineering – see above under programs with specialized accreditation (reaccredited by ABET)
8. BS Physics, BA Physics Education, MS Atmospheric Physics, MS Physics, PhD Atmospheric Physics, PhD Physics – The BS has solid enrollment compared to peers, and graduates are admitted to the most selective graduate programs. The department is revitalizing the BA education program and developing more general education courses, which could mitigate lower enrollments in physics. Applications to graduate programs have tripled, and the NASA-funded research centers are a draw, so work is underway to develop more funding for expansion. There are four established core research areas: atmospheric physics, high-energy astrophysics, quantum information science, and condensed matter physics. The department will work with Facilities Management et al. to complete the Physics building engineering study and implement recommendations. To improve its research infrastructure, Physics will develop facility plans to retain current faculty, attract additional leading faculty, and enable the department and university to compete effectively for external funding.
9. BA Political Science, UDC Public Administration and Policy, UDC Security Studies – The program has a key role in general education, and it is also offered at Shady Grove, where enrollments are relatively low; increased wraparound services may assist all transfer students less prepared for the major, and new courses on state and local government may generate more enrollment at USG. Reviewers praised the department for being student-

centric. The department is working to transition to an R1 teaching load so faculty have more time for research and to pursue external funding opportunities. To increase the efficiency and breadth of course offerings, the department plans to reduce the number of 400-level courses offered and boost the enrollments in those that remain. Curriculum advising will be moved to professional advisors in the college so faculty can mentor but be freed from curriculum advising.

10. MS Systems Engineering, PBC Systems Engineering – The MS was originally developed by request from Northrup Grumman and is aligned with the standards of the International Council on Systems Engineering (INCOSE). The PBC is stackable into this MS and also the MS in Engineering Management. Actions include re-establishing the industry advisory board, hiring more faculty, adding (cross-listed) electives, updating the curriculum, and changing administrative practices to assist with enhanced marketing to grow enrollment.

University of Maryland, College Park										
Program Title (Degree)	2019		2020		2021		2022		2023	
	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees
(B) Aerospace Engineering (includes double majors)	618	104	617	145	618	156	606	140	608	142
(M) Aerospace Engineering*	*	30	*	27	*	21	*	11	*	25
(D) Aerospace Engineering* (*MS/PhD enrollment combined)	125	15	119	24	128	10	121	14	119	19
(B) African American and Africana Studies	36	9	24	11	14	13	13	3	11	4
(C) African American and Africana Studies * *did not indicate enrolled – see introduction*	*	3	*	13	*	11	*	9	*	5
(B) Anthropology	89	36	82	47	70	31	64	21	81	19
(M/D) Anthropology Combined	34	10	29	13	35	5	40	10	38	12
(MPS) Cultural Heritage and Resource Management	10	n/a	22	n/a	30	5	38	5	40	10
(GCPS) Cultural Heritage and Resource Management	*		1	*	2	10	3	8	2	3
(B) Classical Languages and Literatures	20	2	17	5	15	6	20	4	20	5
(M) Classics	7	5	8	3	6	4	5	2	5	3
(B) Communication	827	288	840	338	749	268	614	341	584	236
(M/D) Communications	81	21	63	31	67	14	62	14	52	19
(B) Nutrition and Food Science	189	49	182	49	163	41	125	45	100	45
(M/D) combined – Nutrition and Food Science	39	12	34	8	35	8	38	6	40	5
(B) Public Policy	268	16	330	60	357	79	311	87	317	100
(M) Public Management	39	30	38	25	39	19	48	28	57	25
(M) Public Policy	136	82	161	47	188	79	154	99	142	75
(D) Policy Studies	59	5	61	6	55	8	53	10	49	6
(C) Intelligence Analysis	1	18	1	17	-	3	-		-	

Degree Codes: (B) Bachelor; (M) Master; (D) Doctorate; (BFA) Bachelor of Fine Arts; (BTS) Bachelor of Technical Studies; (BPS) Bachelor of Professional Studies; (UDC) Upper Division Certificate; (PBC) Post-Baccalaureate Certificate; (MAT) Master of Arts in Teaching; Master of Professional Studies (MPS); (PMC) Post-Master Certificate; (CAS) Certificate in Advanced Study.

(C) Nonprofit Management and Leadership	13	4	33	2	28	25	30	15	36	9
(C) Public Sector Finance & Acquisition	*		*	9	*	12	4	5	3	8
(B) Sociology	205	75	219	73	190	83	217	66	239	55
(M/D) Sociology	55	19	53	15	48	18	47	9	55	5
(B) Family Science	273	143	236	142	201	104	187	91	166	80
(B) Kinesiology	744	274	732	236	711	233	691	203	657	189
(B) Public Health Practice	271	90	229	97	189	91	178	102	159	60
(B) Public Health Science	1012	280	1119	321	1159	313	1106	355	1048	355
(M) Public Health (MPH)	205	93	231	80	264	76	256	102	253	109
(M) Health Administration (MHA)	19	12	38	9	59	12	69	9	57	28
(M) Couple and Family Therapy	18	4	20	8	20	11	21	9	17	11
(M/D) Environmental Health Science [new – not yet at 7 years]	11	1	14	-	19	-	19	2	19	3
(M/D) Family Science	14	5	13	4	14	-	14	6	14	3
(M/D) Kinesiology	47	7	47	6	49	6	49	4	50	7
(D) Behavioral and Community Health	39	6	33	9	40	3	34	9	33	7
(D) Epidemiology	17	1	19	2	19	3	18	3	15	5
(D) Health Services Research	34	1	32	6	33	3	36	4	36	7
(D) Maternal and Child Health [new program – not yet at 7 years]	10	-	10	-	11	-	11	-	12	-
(D) Toxicology (w/ UMAB, UMBC & UMES)	3	3	2	3	1		1		1	
(C) Global Health	4	7		5	2	8	4	5	2	3
(C) Principles of Public Health	6	5	4	5	2	5	1	5	-	5
(GCPS) Health Data Analysis	n/a								2	
(D) Urban and Regional Planning and Design	23	2	20	4	13	5	14	3	16	0

Notes:

1. BS Aerospace Engineering – see above at programs with specialized accreditation
2. MS, PhD Aerospace Engineering – The program is recognized for its robust research environment and strong emphasis on advanced aerospace topics, including hypersonics, rotorcraft aeromechanics, and space systems. Its strengths lie in its close integration with leading research centers like the

Alfred Gessow Rotorcraft Center and the new Space Science and Engineering Research Center, providing students access to cutting-edge facilities and research opportunities. The department plans to implement structured pathways to improve time-to-degree, which will involve developing more precise guidelines for dissertation progress and providing targeted mentorship. Efforts to strengthen the community among graduate students will include re-establishing the graduate student advisory committee and introducing a graduate seminar series focused on enhancing technical writing and communication skills.

3. BA, PBC African American and Africana Studies – The reviewers commended the department's robust academic offerings and commitment to interdisciplinary study and community engagement. Reviewers highlighted the need for strategic enhancements to the academic programs to ensure sustainable growth. Key recommendations included expanding and developing a more comprehensive curriculum for innovative courses in emerging fields such as digital humanities and public health. The reviewers also suggested enhancing undergraduate engagement by incorporating more research opportunities and internships into the curriculum, fostering a more robust academic community, and preparing students for diverse career paths. A strategic plan will be developed over the next three to five years to refine the department's educational goals.
4. BA/BS, MS/PhD Anthropology, MA, GCPS Cultural Heritage and Resource Management - To strengthen the UG program, the department will better integrate the BA and BS with its core thematic areas of Health, Heritage, and Environment. This will include revising the curriculum to ensure these themes are more prominent across all courses and subfields. Additionally, the department will increase faculty involvement in teaching introductory courses, particularly those that serve as gateways to the major, to ensure students receive a strong foundational education from experienced faculty members. There will be more experiential learning opportunities (more consistent fieldwork and research options across subfields), to include enhancing support for the existing archaeological field school and creating new medical and environmental anthropology opportunities.
5. BA Classical Languages and Literature, MA Classics - The external reviewers commended the department for its strong academic foundation and curriculum diversity, allowing students to explore various aspects of classical antiquity. The MA plays an important role in regional teacher education. The department plans to address declining enrollments in language courses by rotating more faculty through these courses to provide fresh perspectives and potentially increase student retention and interest. They plan to host more events in central locations like the Stamp Student Center to improve the department's visibility and broader undergraduate community and attract new students to its courses and majors. The department aims to enhance its competitiveness for the graduate program by expanding its advertising efforts to reach a wider audience, mainly targeting regional Latin teachers and students interested in interdisciplinary classical studies. The department will focus on strengthening the curriculum by adding courses that cater to traditional and emerging areas of study within the field of Classics, ensuring that both undergraduate and graduate programs remain relevant and aligned with student interests and professional trends.
6. BA Communication, MA/PhD Communications – The external review reinforced the self-study; reviewers commended the department’s commitment to academic excellence and student success and noted the strength of the undergraduate program’s curriculum but suggested adding more courses focused on emerging communication technologies and interdisciplinary collaboration. For the graduate program, the reviewers emphasized the importance of providing more robust financial and academic support to attract and retain top-tier students. Additionally, they recommended formalizing mentorship and career development programs to prepare graduate students for post-graduate opportunities
7. BS Nutrition and Food Science, MS/PhD Nutrition and Food Science – The external review noted the department's strong reputation and the high quality of its faculty, research, and academic programs, plus its ability to secure significant research funding, mainly through cooperative agreements with federal agencies like the USDA. Challenges include declining undergraduate enrollment. The review highlighted the importance of increasing collaborations with other departments, particularly the School of Public Health, to expand interdisciplinary opportunities and improve the department's visibility. The department will hire a dedicated staff member responsible for managing the department's website, social media, and

recruitment activities and will also increase engagement with prospective students through high school outreach, partnerships with community colleges, and targeted events such as open houses. To further support enrollment growth, the department will enhance the visibility of its programs by collaborating with the College of Agriculture and Natural Resources (AGNR) Communications Office to highlight the achievements of its students, faculty, and alums. The department will also develop more interdisciplinary courses and programs in collaboration with the School of Public Health.

8. BA/BS Public Policy, MM Public Management, M Public Policy, PhD Policy Studies, PBC Intelligence Analysis, PBC Nonprofit Management and Leadership, PBC Public Sector Finance and Acquisition – The Master of Public Policy (MPP) is accredited by NASPAA. This review was of the entire School of Public Policy. Recognizing the popularity of the undergraduate program and the four minor offerings, SPP plans to introduce more flexible core courses and expand electives that align with emerging areas of interest, such as cybersecurity policy, national security, and technology ethics. These additions will allow students to tailor their education to their career goals while maintaining a strong foundational knowledge of public policy. To strengthen its global engagement, SPP will develop partnerships with international organizations and explore opportunities for student exchanges and study abroad programs. Additionally, SPP will work to integrate global perspectives more comprehensively into its curriculum, ensuring that students are equipped to address both local and global policy challenges.
9. BA/BS, MS, PhD Sociology - The department is committed to refining its curriculum for the undergraduate program by introducing a fifth-course cluster focused on emerging social issues related to technology and artificial intelligence. This addition is designed to keep the curriculum current and relevant to societal needs. Furthermore, the department is keen on expanding opportunities for undergraduate research, including summer research experiences supervised by graduate students. This initiative underscores the department's commitment to developing practical skills and preparing for careers in sociology and related fields. For the graduate program, the department plans to prioritize the hiring of senior faculty in areas of strategic importance, such as demography and health, to strengthen mentoring and research support. The department also plans to develop more structured pathways and mentorship programs to guide students through their degree progression, with the aim of reducing the average time-to-degree and improving completion rates.
10. BS Family Science, BS Kinesiology, BS Public Health Practice, BS Public Health Science, MPH Public Health, MHA Health Administration, MS Couple and Family Therapy, MS, PhD Environmental Health Science, MS/PhD Family Science, MS, PhD Kinesiology, PhD Behavioral and Community Health, PhD Epidemiology, PhD Health Services Research, PhD Maternal and Child Health, PhD Toxicology (with UMB, UMBC, UMES), PBC Global Health, PBC Principles of Public Health, GCPS Health Data Analysis – see above in programs with specialized accreditation. Note that the Family Science MS is not generally taken as a distinct degree; rather, it is combined with the PhD. Fewer completions does not indicate a low-enrolled program but rather that very few left the PhD and took a master's upon leaving. The new Environmental Health PhD aligns better with faculty research areas than the Toxicology PhD.
11. PhD Urban and Regional Planning and Design – The pandemic impacted enrollments, which are now recovering. The program was praised for its preparation of graduates and balance of theory and practice. The program will undertake a comprehensive curriculum review to incorporate emerging topics in technology, data analytics, and sustainable urban development. New courses will be introduced to cover advanced research methods and contemporary issues in urban planning, ensuring that students are equipped with the skills needed for the evolving demands of the field. In addition to curriculum enhancements, the program will strengthen its academic support structures. This includes implementing a formal mentorship program where faculty advisors will provide regular guidance to students, helping them navigate the program's complexities and stay on track with their dissertation work. The program will also offer workshops and seminars on professional development, covering academic publishing, grant writing, and career planning.

University of Maryland Eastern Shore										
Program Title (Degree)	2019		2020		2021		2022		2023	
	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees
Notes: UMES had no reports scheduled for review in this cycle. Those that had been anticipated were delayed because of the timing of an accreditation visit.										

University of Maryland Global Campus										
Program Title (Degree)	2019		2020		2021		2022		2023	
	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees
(B) East Asian Studies	235	38	237	49	271	42	261	49	233	49
(B) Business Administration	4975	731	5077	936	4768	969	4792	942	5400	1034
(B) Lab Management	48	11	42	19	34	9	30	5	38	6
(B) Management Information Systems	1243	280	1243	293	1152	302	987	262	1004	266
(M) Cyber Accounting	150	9	174	46	153	56	108	42	88	37
(M) Environmental Management	195	63	176	61	184	48	161	44	136	39
(M) Health Information Management and Technology	420	135	406	129	37	103	290	100	251	80
(M) Management w/11 Concentrations	2553	774	2362	701	1958	634	1705	550	1652	511
(C) Project Management	65	52	81	58	82	59	73	76	102	86

Notes:

1. BA East Asian Studies – The program holds up well against peers. It will require another 3 language credits and add more upper-division language courses to better align with industry standards. The capstone will change to cover topics beyond East Asian religion, aligning more closely with industry needs and student interests. The program will work with the instructional design team regarding the possibility of developing an online placement exam for Chinese language learners to streamline the placement process. Finally, to address the identified challenges and prepare for future growth, the program will request one additional Collegiate Faculty member dedicated to the East Asian Studies program and requesting a dedicated Academic Program Coordinator to support the anticipated increase in student enrollment.
2. BS Business Administration – Student satisfaction has risen over the review period. The review team identified the key strengths of the business administration program as flexibility, wide range of support services, and its diverse, highly knowledgeable, and experienced faculty. Curriculum

design effectively supports student mastery of industry-relevant competencies. Reviewers also noted the curriculum would benefit from including more content on project management, AI, blockchain and other emerging technologies.

3. BS Lab Management – The program has seen an increase in student enrollment since the last review cycle, but growth is slow. The program will work with marketing and internal units to promote the program and explore potential collaborations with local, state and national community colleges to transition from an AAS degree into the BS degree. The currency of and access to high quality science background content will provide student agency during their academic journey. Program leadership will continue to differentiate content and program descriptions between the Laboratory Management program and the Biotechnology program.
4. BS Management Information Systems - Reviewers commended the program for its learning goals focusing on workplace needs and for achieving a good balance between technical and managerial aspects within the program's curriculum, but also recommended curriculum enhancements related to essential "soft skills" needed by graduates from an IT area and areas such as AI, cybersecurity, unconscious hiring bias, system architectures and frameworks, and the dynamics of teamwork; the program will also identify and create two certificate programs and align them with industry certifications wherever possible.
5. MS Cyber Accounting – Despite high demand, accounting enrollments across the country are stagnant. The program's action plan is to enhance student technology use through publisher-supported software to develop fluency in agile processes; increasing student and faculty diversity, promoting opportunities, building local, regional, and national awareness; promoting student progress to earn certifications such as the CPA, Certified Management Accountant (CMA), Certified Internal Auditor (CIA), and Certified Information Systems Auditor (CISA); updating the assessment process and mapping from the academic program review period to the newly revised Program Learning Goals.
6. MS Environmental Management - The program will conduct professional learning experiences with adjunct faculty on new content, rubrics and interrater reliability. The program has identified potential external opportunities for partnerships, specifically in the area of watershed management. Opportunities exist for a certificate at the master's level on this topic to support the need for effective watershed management throughout the U.S. in general, and in the Chesapeake Bay area in particular.
7. MS Health Information Management and Technology – see above at programs with specialized accreditation
8. MS Management (with 11 concentrations) – Each concentration did its own internal and external reviews. Retention is steady or up across areas, some areas dipped in enrollment. Common themes were to incorporate emerging technologies and that certain areas benefit from a general business background with specialization while others should move to a stand-alone degree (i.e., Intelligence Management, Homeland Security Management, Emergency Management and Criminal Justice Management - given current industry and market needs). Financial Management should develop scaffolded credentials and micro-credentials aligned with industry needs and industry-aligned certificates to provide flexible learning pathways and enhance employability; expand and strengthen partnerships with professional organizations to formalize ties with ALPFA, AAAA, and NABA; and update curriculum to ensure continuous alignment with industry needs to reflect industry changes and coverage of emerging finance topics.
9. UDC Project Management – A program that remains highly relevant, it will move evolve through implementing the following actions focused on curriculum and strategy: include risk management and AI applications content in the program; Increase opportunities for acquisition of the skills for working in remote or distributed environments; continuously review the currency and applicability of Open Educational Resources (OERs); increase opportunities to obtain academic credit for work experience and industry certifications; evaluate opportunities for badging and micro-credentialing as well as nano-degrees; collaborate with other programs in the School to increase the visibility of the certificate and create opportunities to seamlessly include this certificate into other business related degrees; and expand industry partnerships to other organizations such as AFERM, AFACFM.org, NIST, Department of Homeland Security, NSA, and the Association of Supply Chain Management.

TOPIC: New Programs 5-Year Enrollment Reviews, Fall 2020 – Fall 2024

COMMITTEE: Education Policy and Student Life and Safety

DATE OF COMMITTEE MEETING: April 3, 2025

SUMMARY: As part of the ongoing review process of academic programs, the attached data have been updated with the Fall 2024 enrollments of programs continuing in the five-year review period. The information provides the Committee with the actual enrollments in new programs approved since Fall 2020, as well as the projections submitted with the initial program proposal.

It is important to note that not all programs are implemented in the year they are approved. Depending on the approval dates from the Board of Regents and MHEC, recruitment and admission to the program may not begin until the next academic year. That means that year 1 in the tables that follow may be a "year zero" during which the program prepares to launch. In addition, admission to (and so enrollment in) an undergraduate program may not occur until the students have completed the required lower-division General Education or core courses, with the result that enrollments are reported two or even three years after initial approval. With those caveats in mind, the enrollment data reflect the relative accuracy for the projected enrollment submitted with the program proposal and provide an opportunity to judge the long-term viability of a new program prior to its first seven-year periodic program review.

ALTERNATIVE(S): This report is for information only.

FISCAL IMPACT: This report is for information only.

CHANCELLOR'S RECOMMENDATION: This report is for information only.

COMMITTEE RECOMMENDATION:	DATE: April 3, 2025
BOARD ACTION:	DATE:

SUBMITTED BY: Alison Wrynn 301-445-1992 awrynn@usmd.edu
Ellen Herbst 301-445-1923 eherbst@usmd.edu

NEW PROGRAM 5-YEAR ENROLLMENT REVIEW
FALL 2020 – FALL 2024

New academic program enrollments are reviewed annually for a period of five years. The Fall 2020 – Fall 2024 review comprises enrollment data for 86 approved new academic programs. The format for the review is standardized and includes the projected and actual enrollments for each program.

The projected enrollments are taken from the program proposals approved by the Board of Regents and MHEC, and the actual enrollments are those achieved and reported each year by the programs. Attention in the review is given to the relationship between the projected and the yearly actual program enrollments.

Programs that began reviews in Fall 2020, Fall 2021, and Fall 2022 reflect actual enrollments for the third year of the programs and beyond. The most recent programs in review, with Fall 2023 and Fall 2024 starts, have varying degrees of actual enrollments as they progress through the first and second years of implementation. It is not unusual for programs to begin enrolling in the academic year following approval. Undergraduate programs may begin but not have enrollments recorded until the point when students can declare the major after early core requirements are completed. Also, these enrollment figures capture only students' primary major, not those who have the program as the second in a double major.

The subsequent sections will present the number of degrees offered and the enrollment performance of the new programs. Note that combined degrees may be created internally without requesting a new degree. This report records only those combinations brought forward together as (or with) new degree programs.

Number of Degrees Offered in the New Programs

Degrees	**No. of Degrees**
Bachelor's (37 are BS)	45
Master's (27 are MS)	34
Doctorate	7
Total	**86**

New Program Enrollment Review Fall 2020 - Fall 2024

Inst.	HEGIS	Program Name	Degree	Approved	Enrollments									
					Fall 2020		Fall 2021		Fall 2022		Fall 2023		Fall 2024	
					Projected	Actual	Projected	Actual	Projected	Actual	Projected	Actual	Projected	Actual
BSU	089900	Culturally Responsive Teacher Leadership	M.Ed	6/19/2020	7	**0**	12	**23**	20	**19**	25	**20**	30	**26**
FSU	099900	Life-Cycle Facilities Management [2]	B.S.	6/19/2020	10	**0**	15	**3**	20	**5**	25	**9**	30	**20**
SU	490200	Integrated Science [3]	B.S.	6/19/2020	17	**0**	21	**3**	26	**11**	30	**18**	36	**34**
SU	170101	Data Science	B.S.	9/20/2019	17	**9**	21	**13**	26	**20**	30	**24**	36	**20**
SU	082800	Outdoor Education Leadership	B.A.	9/20/2019	17	**13**	18	**12**	24	**30**	25	**33**	30	**29**
UBalt	210510	Cyber Forensics [4]	B.S.	6/19/2020	21	**0**	25	**13**	33	**21**	37	**19**	39	**28**
UBalt	149903	Legal Studies [5]	B.A.	11/22/2019	9	**16**	16	**57**	20	**69**	25	**63**	32	**66**
TU	083505	Athletic Training [6]	M.S.	6/19/2020	10	**0**	25	**10**	35	**24**	40	**27**	40	**30**
UMB	121404	Global Health	M.S.	6/19/2020	10	**0**	24	**4**	33	**13**	37	**23**	40	**24**
UMB	121412	Vulnerability and Violence Reduction [7]	M.S.	6/19/2020	12	**0**	15	**0**	18	**0**	21	**0**	21	**0**
UMCP	070400/070401	Immersive Media Design [8]	B.A./B.S	11/22/2019	55	**0**	110	**9**	270	**42**	320	**85**	320	**96**
UMCP	151000	Religions of the Ancient Middle East [9]	B.A.	11/22/2019	6	**0**	16	**2**	21	**1**	31	**1**	41	**3**
UMCP	051100	Real Estate and the Built Environment [10]	B.A.	2/21/2020	55	**0**	110	**0**	270	**5**	270	**58**	270	**90**
UMCP	090500	Biocomputational Engineering [11]	B.S.	5/1/2020	20	**0**	40	**5**	70	**11**	80	**8**	80	**10**
UMCP	221000	International Relations [12]	M.A.	5/1/2020	10	**0**	30	**14**	40	**26**	40	**26**	40	**38**
UMCP	220701	Applied Political Analytics [13]	M.S.	5/1/2020	10	**0**	25	**7**	35	**15**	45	**13**	50	**15**

Note: All enrollments are the students' primary major as reported in the MHEC EIS files. Administrative coding changes at campuses may lag actual program enrollment in initial

[1] The BSU M.Ed. in Culturally Responsive Teacher Leadership began in fall 2021 and is expected to meet projected enrollment.

[2] The FSU B.S. in Life-Cycle Facilities Management launched in Fall 2021. The name has been changed to Sustainable Construction Management to improve clarity and marketing.

[3] The SU B.S. in Integrated Science was approved July, 2020 during pandemic making it difficult to recruit for Fall 2020 and 2021.

[4] The UBalt B.S. in Cyber Forensics program was approved in summer 2020 and launched in 2021.

[5] The UBalt B.A. in Legal Studies program exceeded enrollment projections.

[6] The TU M.S. in Athletic Training was approved in July 2020 and began accepting admission in summer 2021.

[7] The UMB MS in Vulnerability and Violence Reduction deferred launch to fall 2024 as part of an international agreement, which had challenges and the program will be suspended.

[8] The UMCP B.A./B.S. in Immersive Media Design had a fall 2021 start. Enrollments built slowly after the pandemic.

[9] The UMCP B.A. in Religions of Ancient Middle East had a fall 2021 start. Classics, Persian Studies, Arabic Studies, and Jewish Studies have solid enrollments; projections will be reviewed.

[10] The UMCP B.A. in Real Estate Development program delayed start during the pandemic and was securing funding; it began enrolling in Fall 2022.

[11] The UMCP B.S. in Biocomputational Engineering started Fall 2021 at Shady Grove. This is a degree completion program; pandemic effects led to a slow start.

[12] The UMCP M.A. in International Relations: program is operating as a "4+1" BA/MA program only. Students admitted in Fall 2020 are in the 4th year of BA thus not counted yet in the MA program.

[13] The UMCP M.S. in Applied Political Analytics anticipates fall 2021 start for 1st cohort of MS students. Program intended to be both stand-alone MS program and "4+1" BS/MS program.

Updated: January 2025 -- University System of Maryland Office of Institutional Research

New Program Enrollment Review Fall 2021 - Fall 2025

Inst.	HEGIS	Program Name	Degree Level	Approved	Enrollments									
					Fall 2021		Fall 2022		Fall 2023		Fall 2024		Fall 2025	
					Projected	Actual	Projected	Actual	Projected	Actual	Projected	Actual	Projected	Actual
CSU	170300	Data Science [1]	B.S.	6/17/2021	15	0	31	2	47	6	63	5	84	
CSU	041400	Applied Molecular Biology and Biochemistry	M.S.	9/18/2020	5	2	10	1	15	5	22	6	27	
CSU	091500	Polymers and Materials Sciences [2]	M.S.	9/18/2020	4	2	7	5	12	6	18	4	24	
CSU	120101	Health Information Management [3]	M.S.	6/17/2021	15	0	22	1	30	1	42	4	51	
UMB	129903	Health Professions Education	M.S.	2/19/2021	6	0	10	6	15	12	20	6	26	
UMB	220100	Diversity Equity and Inclusion Leadership	M.S.	4/16/2021	9	0	14	11	20	35	24	36	24	
UMB	120101	Palliative Care	PhD	6/17/2021	15	12	45	22	60	34	60	45	15	
UMCP	079901	Social Data Science [4]	B.S.	6/17/2021	50	0	100	25	400	67	800	103	1200	
UMCP/USG	011200	Fermentation Science [5]	B.S.	6/17/2021	12	0	23	1	46	1	52	3	58	
UMCP	010101	Extension Education	M.Ed	4/16/2021	10	0	20	6	20	6	20	6	20	
UMES	060501	Digital Media Studies [6]	B.A.	9/18/2021	20	16	25	32	30	54	40	63	50	
UMES	083503	Sport Management [8]	B.S.	2/19/2021	15	0	27	31	38	60	48	91	48	
UMGC	070300	Data Science	B.S.	4/16/2021	50	0	75	335	100	658	125	827	125	

Note: All enrollments are the students' primary major as reported in the MHEC EIS files. Administrative coding changes at campuses may lag actual program enrollment in initial years.

[1] The CSU BS in Data Science launched in Fall 2022. The program is now being promoted more aggressively and will be offered at USMSM. Out-year projections are being adjusted.

[2] These two programs' marketing will be revisited; nine international students have been accepted, but visa issues kept them from enrolling.

[3] The CSU MS Health Information Management program began in Fall 2022. The pandemic had an impact, andt out-year projections are being reviewed. An accelerated BS-MS will

[4] The UMCP Social Data Science program did not launch until Fall 2022.

[5] The UMCP BS in Fermentation Science launched late at USG; pandemic effects led to a slow start.

[6] The UMES Digital Media Studies B.S. is listed as "Digital Media Arts" in the State program taxonomy and needs to be amended.

[7] Available on-campus and online with 8-week terms, the program has grown nationally.

Updated: January 2025 -- University System of Maryland Office of Institutional Research

New Program Enrollment Review Fall 2022 - Fall 2026

Inst.	HEGIS	Program Name	Degree Level	Approved	Enrollments									
					Fall 2022		Fall 2023		Fall 2024		Fall 2025		Fall 2026	
					Projected	Actual	Projected	Actual	Projected	Actual	Projected	Actual	Projected	Actual
BSU	070221	Cyber Operations Engineering	B.S.	5/10/2022	9	0	13	5	19	17	29		39	
BSU	170220	Data Science [1]	B.S.	5/10/2022	11	0	21	2	31	4	41		51	
BSU	150900	Philosophy, Politics, and Economics	B.S.	5/10/2022	5	0	8	1	11	4	14		17	
BSU	070121	Software Engineering	B.S.	5/10/2022	11	0	16	5	21	5	31		41	
BSU	041600	Applied Biotechnology and Molecular Biology	M.S.	5/10/2022	9	0	18	3	18	9	27		27	
BSU	079900	Internet of Things and Internet Technology	M.S.	5/10/2022	10	0	12	14	14	12	16		18	
CSU	082700	Teacher Leadership	M.Ed.	5/10/2022	5	0	12	21	19	42	24		36	
FSU	229921	Multidisciplinary Studies	B.S.	5/10/2022	16	3	20	9	25	8	28		32	
FSU	120321	Nursing	B.S.	5/10/2022	30	0	60	22	60	43	60		60	
FSU	120323	Licensed Practical Nurse/Nursing	B.S.	5/10/2022	40	0	80	25	80	104	80		80	
SU	121201	Health Science	B.S.	5/10/2022	8	5	18	85	30	120	44		52	
TU	210321	Fitness and Wellness Leadership [2]	B.S.	5/10/2022	80	7	150	45	230	61	320		420	
TU	083321	Computer and Mathematical Sciences	B.S.	9/14/2021	11	3	16	12	21	17	24		25	
UMB	120123	Clinical Informatics [3]	M.S.	9/14/2021	9	0	20	5	25	4	30		30	
UMCP	070221	Technology and Information Design [4]	B.A.	9/14/2021		10		67		107				
UMCP	050101	Business Administration [5]	D.B.A.	11/8/2021	17	0	34	6	51	12	51		51	

Note: All enrollments are the students' primary major as reported in the MHEC EIS files. Administrative coding changes at campuses may lag actual program enrollment in initial years.

[1] The BSU bachelor's programs launched in Fall 2023, and the undergraduate students usually enter two years later when they declare majors.

[2] The TU Fitness and Wellness Leadership program launched in Fall 2022 with no lead time for advertizing.

[3] The UMB program launched in 2023. It is expected to meet enrollment projections over time, but out-year projections will be reviewed.

[4] The UMCP Technology and Information Design B.A. does not have enrollment projections in the program approval. Program launched in Fall 2023.

[5] The UMCP DBA program launched in Fall 2023. It is expected to meet projections over time.

Updated: January 2025 -- University System of Maryland Office of Institutional Research

New Program Enrollment Review Fall 2023 - Fall 2027

Inst.	HEGIS	Program Name	Degree Level	Approved	Enrollments									
					Fall 2023		Fall 2024		Fall 2025		Fall 2026		Fall 2027	
					Projecte	Actual	Projecte	Actual	Projecte	Actual	Projecte	Actual	Projecte	Actual
BSU	120100	Public Health Informatics and Technology	B.S.	1/10/2023	16	**15**	31	**51**	47		62		78	
BSU	120200	Health Services Administration	B.S.	1/10/2023	16	**16**	31	**52**	47		62		78	
BSU	082800	Counselor Education and Supervision	Ph.D.	5/11/2023	6	**0**	12	**21**	18		24		30	
CSU	092500	Cybersecurity Engineering	B.S.	1/10/2023	20	**2**	34	**32**	56		76		99	
FSU	080800	Elementary/Special Education Dual Certification	B.S.	1/10/2023	5	**0**	15	**12**	25		35		55	
FSU	042001	Environmental Science	B.S.	3/14/2023	11	**4**	11	**17**	16		17		22	
FSU	042000	Environmental Management and Sustainability (with UMCES)	M.S.	1/10/2023	5	**2**	7	**5**	9		11		12	
SU	080201	Elementary Education w/ Dual Cert. in Early Childhood Educat	B.S.	9/20/2022	14	**40**	17	**60**	21		25		29	
TU	220400	Economic Analytics [1]	M.S.	1/10/2023	10	**0**	20	**7**	24		27		31	
TU	060103	Communication and Advocacy	M.A.	5/11/2023	18	**0**	35	**8**	38		42		50	
TU	129900	Autism Studies	Ph.D.	3/14/2023	7	**0**	14	**9**	21		21		21	
UBalt	200103	Industrial and Organizational Psychology	M.S.	3/14/2023	35	**0**	40	**20**	44		48		52	
UBalt	200102	Counseling	M.S.	3/14/2023	97	**0**	99	**106**	99		101		101	
UMB	120700	Medical Science	D.M.Sc.	11/15/2022	10	**8**	20	**8**	30		40		40	
UMBC	070101	Cybersecurity [2]	M.S.	6/5/2023	111	**0**	134	**58**	137		157		168	
UMCP	122004	Hearing and Speech Sciences [3]	M.A.	1/10/2023	1	**0**	1	**0**	1		1		1	
UMES	090500	Biomedical Engineering [4]	B.S.	11/15/2022	18	**0**	35	**16**	52		69		86	
UMES	130300	Fashion Merchandising and Design [5]	B.S.	11/15/2022	45	**7**	50	**18**	55		60		75	
UMES	130100	Human Ecology [6]	M.S.	11/15/2022	15	**0**	20	**12**	25		30		40	
UMES	079900	Data Science and Analytics Engineering [7]	M.S.	11/15/2022	10	**0**	15	**5**	20		25		30	
UMES	090900	Electrical and Mechatronics Engineering [8]	M.S.	11/15/2022	11	**0**	17	**3**	23		29		36	
UMES	090100	Applied Computing and Engineering	Ph.D.	11/15/2022	10	**6**	15	**18**	25		30		35	
UMGC	070102	Applied Technology	B.S.	1/10/2023	25	**69**	100	**224**	200		300		400	
UMGC	200400	Clinical Professional Counseling	M.S.	5/11/2023	25	**0**	49	**18**	71		93		111	

Note: All enrollments are the students' primary major as reported in the MHEC EIS files. Administrative coding changes at campuses may lag actual program enrollment in initial years.

[1] The Towson programs here all launched in Fall 2024.

[2] This UMBC master's has robust enrollment in the MPS that is transitioning to the MS. Projections are expected to be met.

[3] The UMCP MA in Hearing and Speech Sciences is designed to be an option if someone will not complete the PhD, so enrollment not expected to be large

[4] The UMES BS in Biomedical Engineering launched in Fall 2024.

[5] The UMES BS in Fashion Merchandising and Design is expected to meet enrollment over time after first-year students have time to reach the major.

[6] The uMES Human Ecology program launched in Fall 2024.

[7] The UMES MS in Data Science and Analytics Engineering launched in Fall 2024. There was some marketing lag.

[8] The UMES MS in Electrical and Mechatronics Engineering launched in Fall 2024. There was some marketing lag.

Updated: January 2025 -- University System of Maryland Office of Institutional Research

New Program Enrollment Review Fall 2024 - Fall 2028

Inst.	HEGIS	Program Name	Degree Level	Approved	Enrollments									
					Fall 2024		Fall 2025		Fall 2026		Fall 2027		Fall 2028	
					Projected	Actual	Projected	Actual	Projected	Actual	Projected	Actual	Projected	Actual
BSU	060100	Virtual Reality and Gaming [1]	B.S.	5/14/2024	13	0	16		24		33		40	
SU	060101	Public Communication	M.A.	1/16/2024	10	5	18		23		26		29	
SU	190201	Engineering Physics	B.S.	4/12/2024	25	1	27		28		31		33	
SU	129908	Music Therapy	B.A.	4/12/2024	3	0	5		7		10		12	
TU	190202	Biophysics	B.S.	4/12/2024	7	0	17		24		34		40	
TU	190201	Interdisciplinary Physics	B.S.	4/12/2024	2	0	5		8		11		13	
UBalt	059900	Artificial Intelligence for Business	M.S.	4/12/2024	10	3	35		40		50		55	
UMCP	121405	Global Health	B.S.	11/29/2023	60	0	175		330		330		330	
UMCP	070102	Data Science	M.S.	11/29/2023	124	310	124		124		124		124	
UMCP	070103	Applied Machine Learning	M.S.	11/29/2023	73	175	73		73		73		73	
UMCP	041900	Bioinformatics and Computational Biology	M.S.	11/29/2023	18	21	18		18		18		18	
UMCP	221001	International Relations	B.A.	4/12/2024	330	0	330		330		330		330	
UMCP	221002	International Relations	B.S.	4/12/2024	330	0	330		330		330		330	
UMCP	070102	Quantum Computing	M.S.	4/12/2024	18	13	18		18		18		18	
UMES	070121	Gaming and Software Engineering	B.S.	11/29/2023	20	3	25		30		30		30	
UMES	121800	Doctor of Veterinary Medicine	DVM	11/29/2023	100	0	190		275.5		275.5		275.5	
UMES	051001	Aviation Maintenance Management	B.S.	4/12/2024	45	0	55		90		90		90	

Note: All enrollments are the students' primary major as reported in the MHEC EIS files. Administrative coding changes at campuses may lag actual program enrollment in initial years.

[1] This program, like most listed here, did not launch by Fall 2024 because MHEC approved the programs less than a year before Fall 2024.

Updated: January 2025 -- University System of Maryland Office of Institutional Research

UNIVERSITY SYSTEM of MARYLAND

BOARD OF REGENTS
SUMMARY OF ITEM FOR ACTION, INFORMATION, OR DISCUSSION

TOPIC: Update on Teacher Preparation

COMMITTEE: Committee on Education Policy and Student Life and Safety

DATE OF COMMITTEE MEETING: Thursday, April 3, 2025

SUMMARY: Associate Vice Chancellor for Education and Engagement, Jennifer Lynch, will provide an update on teacher preparation in the USM. She will provide an overview of P20 initiatives, as well as Maryland's teacher workforce needs. She will then take a closer look at the shortage of teachers and how the USM is working to address the shortage, including working with MHEC and MSDE.

ALTERNATIVE(S): This is an information item.

FISCAL IMPACT: This is an information item.

CHANCELLOR'S RECOMMENDATION: This is an information item.

COMMITTEE RECOMMENDATION:	DATE: April 3, 2025
BOARD ACTION:	DATE:
SUBMITTED BY: Alison Wrynn 301-445-1992	awrynn@usmd.edu

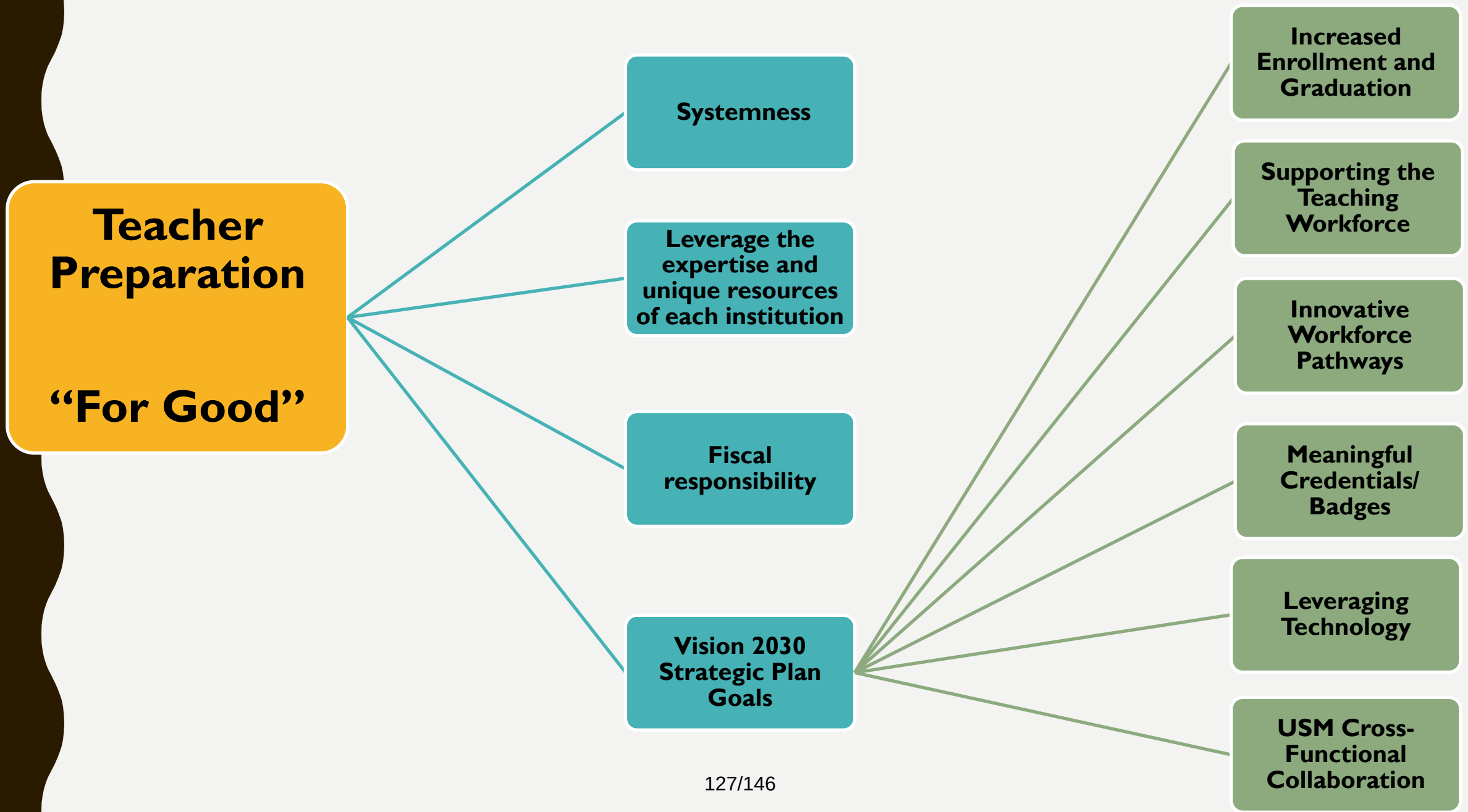
EDUCATION AND ENGAGEMENT OFFICE:

TEACHER PREPARATION

JENNIFER LYNCH

EDUCATION AND ENGAGEMENT OFFICE

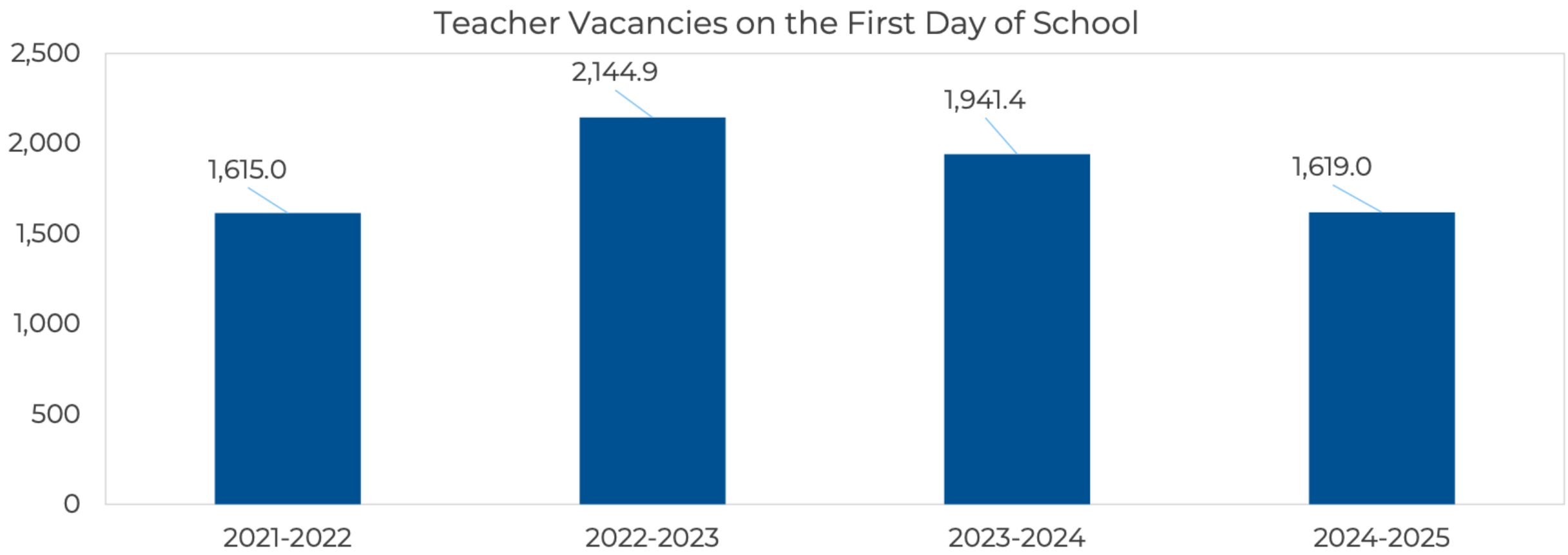
- P20 Initiatives
- Maryland Computing Center for Education
- ABC Peer Mentoring
- Civic Education and Community Engagement
- Early College
- Teacher Preparation


Teacher Preparation
"For Good"
Systemness
Leverage the expertise and unique resources of each institution
Fiscal responsibility
Vision 2030 Strategic Plan Goals
Increased Enrollment and Graduation
Supporting the Teaching Workforce
Innovative Workforce Pathways
Meaningful Credentials/ Badges
Leveraging Technology
USM Cross-Functional Collaboration

MARYLAND TEACHING WORKFORCE

Teacher Vacancies

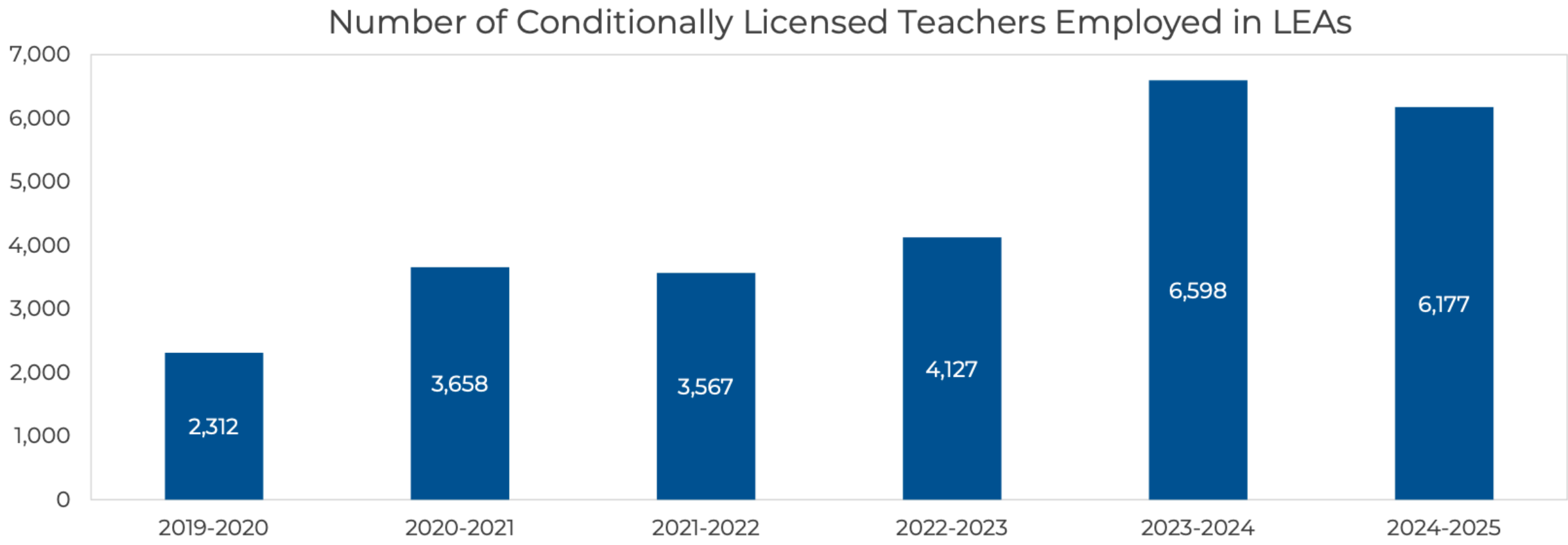
Teacher vacancies declined by 17% in SY 2024-2025.



Source: MSDE Annual Vacancy Data Collection

Maryland Conditional Licensure Trends

The number of teachers with a conditional license decreased by 6% in SY 2024-2025 and make up 10% of Maryland's teacher workforce.



Source: MSDE Staff Data Collection and MSDE Educator Licensure System.

TRENDS AND OPPORTUNITIES

Interest

- Only 1.8% of 9th graders in Maryland's K-12 Schools become teachers, even lower for students of color

Education Pathways

- In 2024, USM Enrolled 5,778 undergraduate students and 4,122 graduate students
- In 2024, USM Graduated 1,384 undergraduate students and 1,007 graduate students
- For those students of color who do become teachers, over 50% enter through an alternative instead of a traditional pathway

Geography

- 80% of novice teachers attended a Maryland K-12 public school
- 52% of novice teachers work in the same county where they went to school

PATHWAYS TO TEACHING

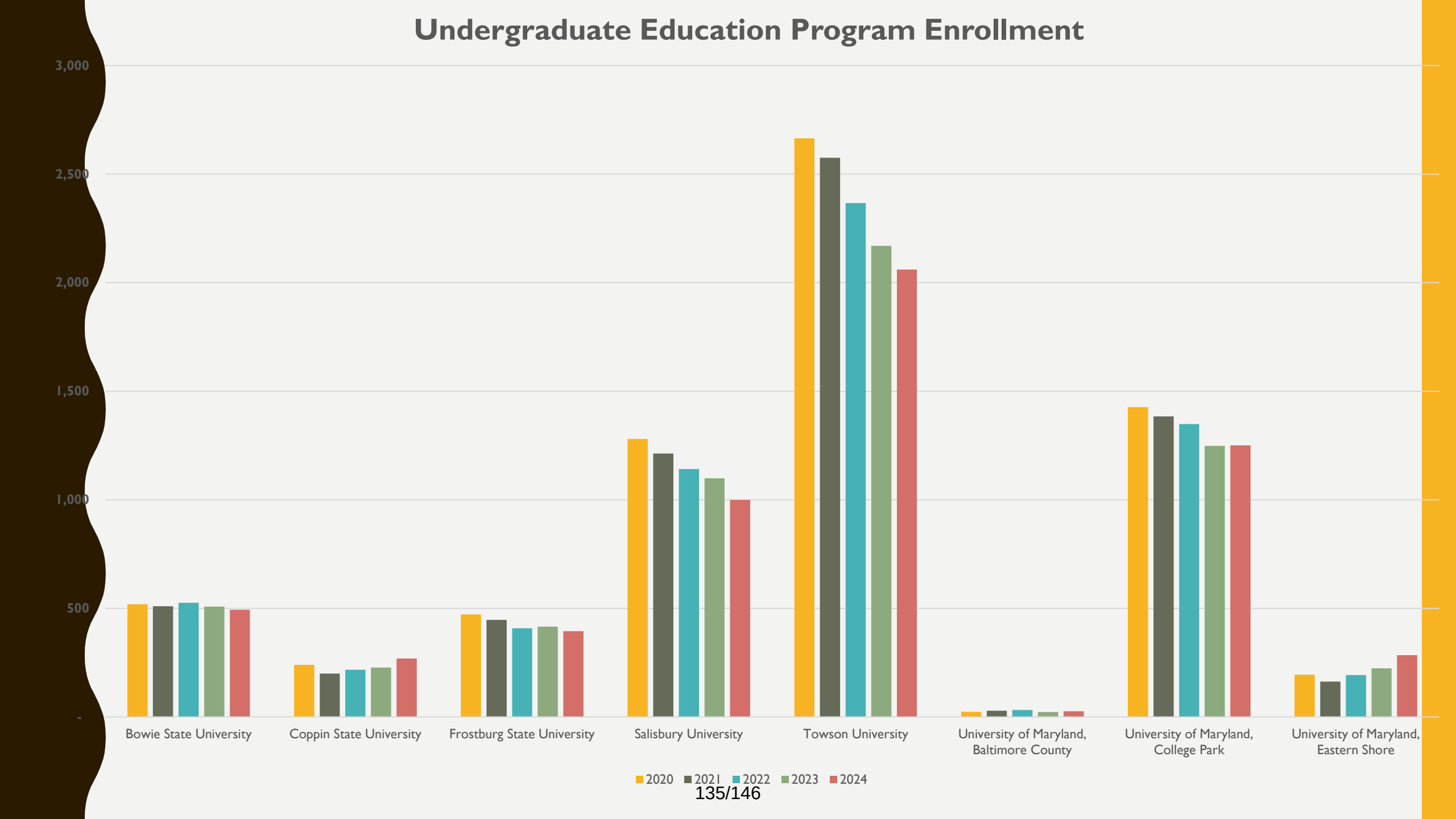
- TAM
- AAT
- Teaching Apprenticeships
- Traditional 4-year programs
- Residency Programs
- Alternate Certifications
- In-District Pathways

USM PROGRAMS

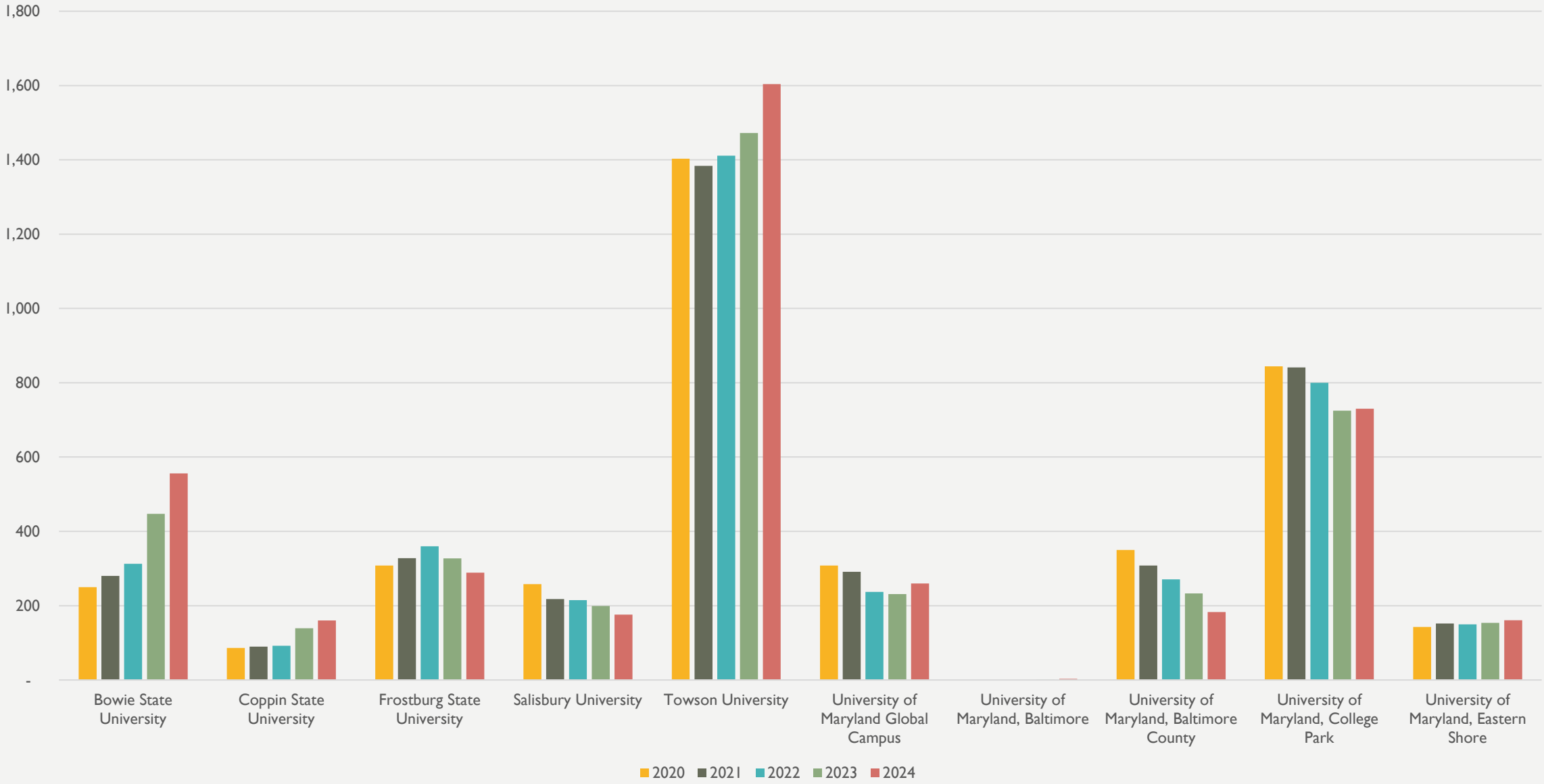
- 9 Universities
  - Bowie, Coppin, UMBC, UMD, UMES, UMGC, Frostburg, Towson, Salisbury
- 135+ Bachelor Programs
- 140+ Masters Programs
- 19 Post Masters/PhD Programs
- Programs
  - Teaching (early elementary, elementary, secondary, content, special education)
  - Reading Specialist
  - Library Media Specialist
  - Counseling
  - School Psychology
  - Audiology
  - Administration

USM ENROLLMENT TRENDS

Undergraduate Education Program Enrollment



Graduate Education Programs Enrollment



OUR WORK:

FOR GOOD

USM TEACHER CERTIFICATION CONSORTIUM

THE PROBLEM

of Conditionally licensed teachers across MD continues to rise

Enrollment in traditional teacher preparation programs is declining

USM is not graduating enough students to meet the workforce needs

Traditional programs are not improving teacher diversity

LEAs are partnering with out of state online licensure programs

THE SOLUTION:

USM CONSORTIUM

INNOVATIVE TEACHER LICENSURE PATHWAYS

Key Audience

- Conditionally Certified Teachers

Program Structure

- Non-credit
- Licensure only
- Online
- Asynchronous
- Module Based
- 10 Month Program

Unique Elements

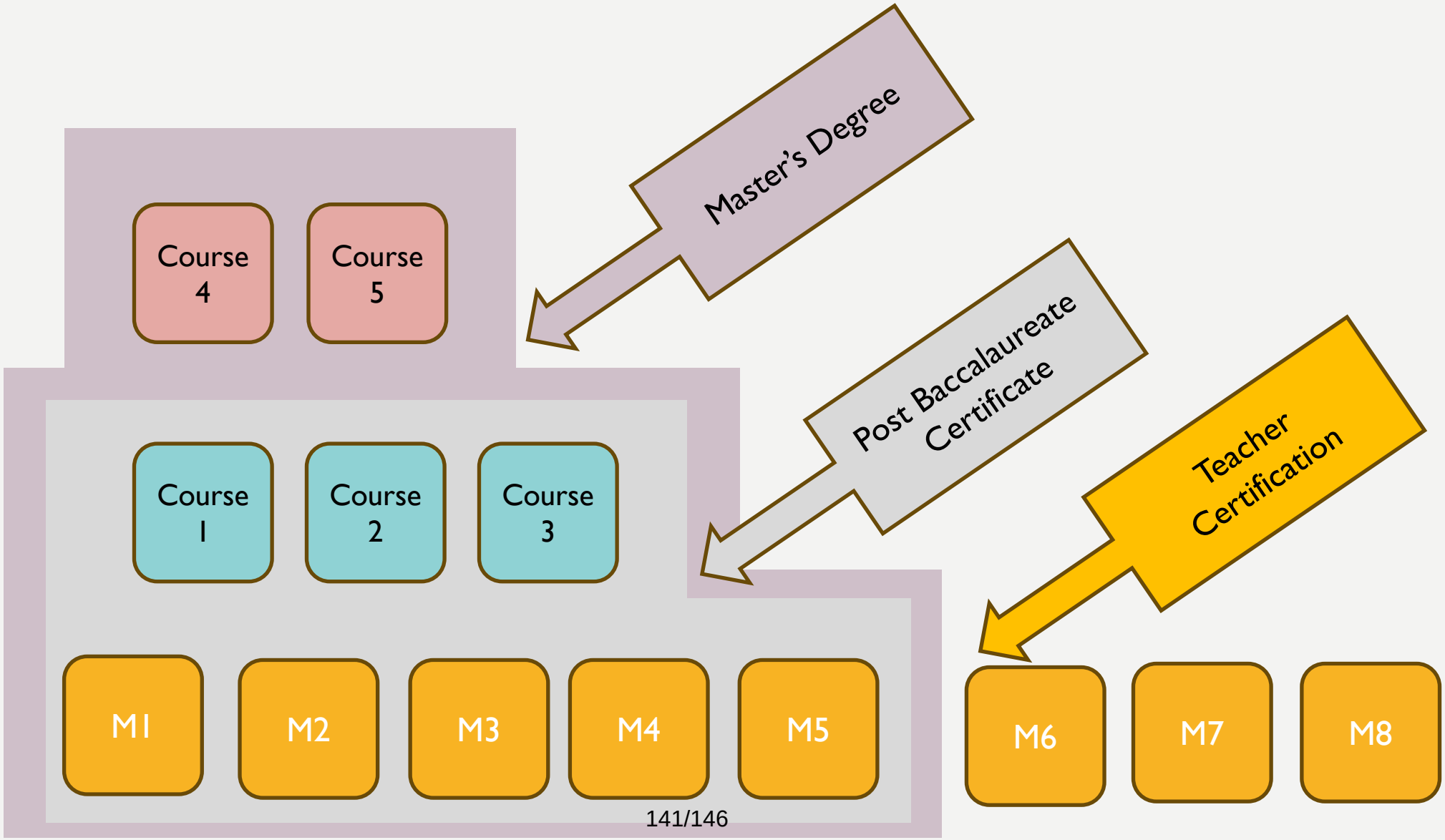
- Consortia of USM Ed Deans provide content
- 1:1 Mentors
- Specially designed modules that center on-the-job professional development
- Modules will result in a competency badge that will be accepted for transfer in USM institutions
- The USM will confer the candidate for certification and will be identified by MSDE as a "consortium of higher education programs"

Aligning Teacher Certification to Workforce Professional Development

- Student Engagement
- Differentiating Instruction
- Revisiting Classroom Management
- Data-based Instructional Design
- Deeper Dive in Literacy

September	☑ Introduction to building supportive and inclusive classroom structures and effective classroom management ☑ Building engagement on day one: Engaging every learner
October November	☑ Introduction to the Science of Reading ☑ Differentiating Today's Curriculum for Every Learner
December	☑ Ethics and Professional Responsibility ☑ Differentiating Today's Curriculum for Every Learner
January	☑ Deeper Dive into Classroom Management and Designing Inclusive Classrooms ☑ Evidence-Based Instructional Strategies for Effective STEM Teaching
February	☑ Evidence-Based Instructional Strategies for Effective STEM Teaching ☑ Data in Instructional Design
March	☑ Data in Instructional Design ☑ Learning, Cognitive, Social, and Behavioral Development
April	☑ Learning, Cognitive, Social, and Behavioral Development ☑ Enhancing Literacy, Reading, and Writing Development through the Science of Reading
May	☑ Enhancing Literacy, Reading, and Writing Development through the Science of Reading ☑ Collegial, Family, and Community Engagement
June	☑ Developing Mathematical Thinking and Instruction through Evidence-Based Practices ☑ Digital Literacy

STACKABLE CREDENTIALS



QUESTIONS

JENNIFER LYNCH

ASSOCIATE VICE CHANCELLOR FOR EDUCATION AND ENGAGEMENT

JLYNCH@UMD.EDU

TOPIC: Convening Closed Session

COMMITTEE: Committee on Education Policy and Student Life and Safety

DATE OF MEETING: April 3, 2025

SUMMARY: The Open Meetings Act permits public bodies to close their meetings to the public in special circumstances outlined in §3-305 of the Act and to carry out administrative functions exempted by §3-103 of the Act. The Board of Regents will now vote to reconvene in closed session. As required by law, the vote on the closing of the session will be recorded. A written statement of the reason(s) for closing the meeting, including a citation of the authority under §3-305 and a listing of the topics to be discussed, is available for public review.

It is possible that an issue could arise during a closed session that the Board determines should be discussed in open session or added to the closed session agenda for discussion. In that event, the Board would reconvene in open session to discuss the open session topic or to vote to reconvene in closed session to discuss the additional closed session topic.

ALTERNATIVE(S): No alternative is suggested.

FISCAL IMPACT: There is no fiscal impact

CHANCELLOR'S RECOMMENDATION: The Chancellor recommends that the Committee vote to reconvene in closed session.

COMMITTEE ACTION:	DATE: April 3, 2025
BOARD ACTION:	DATE:

SUBMITTED BY: Alison Wrynn, awrynn@usmd.edu, 301-445-1992

UNIVERSITY SYSTEM of MARYLAND

STATEMENT REGARDING CLOSING A MEETING
OF THE USM BOARD OF REGENTS

Date: April 3, 2025
Time: Approximately 11 a.m.
Location: Via Zoom

STATUTORY AUTHORITY TO CLOSE A SESSION

Md. Code, General Provisions Article §3-305(b):

(1) To discuss:

[X] (i) The appointment, employment, assignment, promotion, discipline, demotion, compensation, removal, resignation, or performance evaluation of appointees, employees, or officials over whom it has jurisdiction; or

[ ] (ii) Any other personnel matter that affects one or more specific individuals.

(2) [X] To protect the privacy or reputation of individuals with respect to a matter that is not related to public business.

(3) [ ] To consider the acquisition of real property for a public purpose and matters directly related thereto.

(4) [ ] To consider a preliminary matter that concerns the proposal for a business or industrial organization to locate, expand, or remain in the State.

(5) [ ] To consider the investment of public funds.

(6) [ ] To consider the marketing of public securities.

(7) [ ] To consult with counsel to obtain legal advice on a legal matter.

(8) [ ] To consult with staff, consultants, or other individuals about pending or potential litigation.

(9) [ ] To conduct collective bargaining negotiations or consider matters that relate to the negotiations.

(10) [ ] To discuss public security, if the public body determines that public discussions would constitute a risk to the public or public security, including:

(i) the deployment of fire and police services and staff; and

(ii) the development and implementation of emergency plans.

(11) [ ] To prepare, administer or grade a scholastic, licensing, or qualifying examination.

(12) [ ] To conduct or discuss an investigative proceeding on actual or possible criminal conduct.

(13) [X] To comply with a specific constitutional, statutory, or judicially imposed requirement that prevents public disclosures about a particular proceeding or matter.

(14) [ ] Before a contract is awarded or bids are opened, to discuss a matter directly related to a negotiation strategy or the contents of a bid or proposal, if public discussion or disclosure would adversely impact the ability of the public body to participate in the competitive bidding or proposal process.

(15) [ ] To discuss cybersecurity, if the public body determines that public discussion would constitute a risk to:

(i) security assessments or deployments relating to information resources technology;

(ii) network security information, including information that is:

1. related to passwords, personal identification numbers, access codes, encryption, or other components of the security system of a governmental entity;

2. collected, assembled, or maintained by or for a governmental entity to prevent, detect, or investigate criminal activity; or

3. related to an assessment, made by or for a governmental entity or maintained by a governmental entity, of the vulnerability of a network to criminal activity; or

(iii) deployments or implementation of security personnel, critical infrastructure, or security devices.

Md. Code, General Provisions Article §3-103(a)(1)(i):

[ ] Administrative Matters

TOPICS TO BE DISCUSSED:

Recommendations for Regents' Student Excellence Scholarships

REASON FOR CLOSING:

1. To maintain confidentiality of personnel-related and personal information of candidates for student scholarships and to comply with federal law protecting privacy of student education records. (§3-305(b)(1), (2) and (13)).