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Board of Regents ~ Committee on Education Policy and Student Life

Tuesday, January 10, 2023 ~ 9:30 a.m.

**Zoom Details to be Provided to Committee
Public Listen-Only Access: 1-443-353-0686 ~ Conference ID: 483 366 745**

Public Session Agenda

Action Items

- I. Academic Program Proposals:
 - a. Bowie State University: B.S. Public Health Informatics and Technology
 - b. Bowie State University: P.B.C. Public Health Informatics
 - c. Bowie State University: B.S. Health Services Administration
 - d. Coppin State University: B.S. Cybersecurity Engineering
 - e. Frostburg State University: B.S. Elementary Education/Special Education Dual Certification Major
 - f. Frostburg State University: Master of Environmental Management in Sustainability w/ UMCES
 - g. Towson University: Master of Science in Economic Analytics
 - h. University of Maryland, College Park: M.A. Hearing and Speech Services
 - i. University of Maryland Global Campus: B.S. Applied Technology

Information Items

2. Results of Periodic (7-Year) Review of Academic Programs
3. Report: Workload of the USM Faculty – Academic Year 2021-2022
4. Report on Extramural Funding – FY 2022

Action Item

5. Motion to Adjourn and Reconvene in Closed Session



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

TOPIC: Academic Program Proposal:
Bowie State University: Bachelor of Science in Public Health Informatics and Technology

COMMITTEE: Education Policy and Student Life

DATE OF COMMITTEE MEETING: Tuesday, January 10, 2023

SUMMARY: Bowie State University’s proposed Bachelor of Science in Public Health Informatics and Technology program supports BSU’s mission to address the needs of the workforce in this area of public health across the region and the state. The US healthcare ecosystems have become increasingly digitalized and connected. The acute shortage of public health informatics professionals is revealed with the recent efforts to manage the COVID-19 pandemic and the opioid crisis. As a result, workforce development to fill this gap is critical, and the federal government has this as one of its top priorities, emphasizing educating and training more underrepresented students and workers to diversify the workforce in this area.

The multidisciplinary curriculum incorporates nursing, management information systems, and computer science courses. Specific learning outcomes will include critical thinking and problem-solving skills, professional-level oral and communication skills, and soft skills needed for the workplace. Special topics include health equity, data science, epidemiology, public health analytics, public health reporting, emergency preparedness and response, and HL7 Fast Healthcare Interoperability Resources. The core courses required are strategically mapped across the curriculum in preparation for program certification. It is designed to prepare students for careers such as public health informatics specialists, system analysts, data analysts, managers, consultants, or designers/developers in different health systems, hospitals, academia, insurance, pharmacy, and other organizations.

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

FISCAL IMPACT: No additional funds required. The program can be supported by projected tuition and fees.

CHANCELLOR’S RECOMMENDATION: That the Education Policy and Student Life Committee recommend that the Board of Regents approve the proposal from Bowie State University to offer the Bachelor of Science (B.S.) in Public Health Information and Technology.

COMMITTEE RECOMMENDATION: DATE: January 10, 2023

BOARD ACTION: DATE:

SUBMITTED BY: Joann A. Boughman 301-445-1992 jboughman@usmd.edu



Aminta H. Breaux, Ph.D.
President

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December 1, 2022

Jay A. Perman, MD
Chancellor
University System of Maryland
3300 Metzgerott Road
Adelphi, Maryland 20783-1690

RE: New Academic Program Proposal – Bachelor of Science in Public Health Informatics and Technology

Dear Chancellor Perman,

Please find enclosed a proposal to offer a new Bachelor of Science in Public Health Informatics and Technology (B.S. PHIT) program at Bowie State University (HEGIS 120101/CIP 519999).

The proposed B.S. in Public Health Informatics and Technology program's innovative curriculum was developed in partnership with the Office of the National Coordinator (ONC) for Health Information Technology with the Department of Health and Human Services (HHS). It is designed to address the shortage of PHIT professionals in the workforce, especially those from underrepresented communities, and prepares students for careers as informatics specialists, system analysts, data analysts, managers, consultants and developers/designers in a host of industries.

We respectfully request the Board's consideration of this proposal.

Sincerely,

A handwritten signature in black ink that reads "Aminta H. Breaux".

Aminta H. Breaux

Cc: Dr. Carl B. Goodman, Provost and Vice President for Academic Affairs, BSU
Dr. Joann Boughman, Senior Vice Chancellor, USM
Dr. Darlene Smith, Interim Associate Vice Chancellor, USM
Dr. Cheryl Blackman, Interim Dean, College of Professional Studies, BSU
Ms. Jacqueline M. Cade, Manager of Institutional and Academic Programming, BSU
Ms. Shari Christie, Registrar, BSU
Ms. Gayle Fink, Office of Planning, Analysis, and Accountability, BSU

UNIVERSITY SYSTEM OF MARYLAND INSTITUTION PROPOSAL FOR

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

Bowie State University

Institution Submitting Proposal

Public Health Informatics and Technology

Title of Proposed Program

Bachelor of Science

Award to be Offered

Fall 2023

Projected Implementation Date

120101

Proposed HEGIS Code

519999

Proposed CIP Code

Nursing

Department in which program will be located

Dr. Birthale Archie

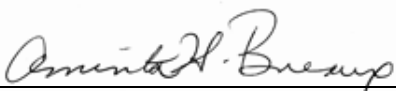
Department Contact

301-860-3204

Contact Phone Number

barchie@bowiestate.edu

Contact E-Mail Address



Signature of President or Designee

12/1/2022

Date

A. Centrality to Institutional Mission 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.*
- 2. Explain how the proposed program supports the institution's strategic goals and provide evidence that affirms it is an institutional priority.*

Informatics is the process by which raw data are turned into actionable information, which is then turned into knowledge using methods, tools and concepts driven by the application of the theory and practices from computer science, information sciences, and behavioral and management sciences. Informatics is central to the practice of public health and healthcare in the 21st century, and this program aims to prepare public health informatics professionals who are high in demand. According to AHIMA (American Health Information Management Association), the field of health informatics includes clinical informatics, public informatics, consumer health informatics and translational bioinformatics.

The proposed Bachelor of Science in Public Health Informatics and Technology (PHIT) at Bowie State University (BSU) focuses on public and population health data, information, knowledge processing, usage, and management. It is designed to prepare students for careers in public health informatics. Students may work as public health informatics specialists, system analysts, data analysts, managers, consultants, or designers/developers in the different health systems, hospitals, academia, insurance, pharmacy, and other organizations (Joshi and et al, 2021). Public health informatics professionals are responsible for meeting the needs of those who use data, information and knowledge by eliciting and determining their requirements; designing, developing, managing, and evaluating information technology and systems that are crucial to surveillance, assessment and assurance practice; designing and developing information technology and systems to support effective decision making by public health leaders; and seeking to support the public health enterprise and improve population health. (Baker, et al., 2016).

Program's relation to BSU's mission:

Bowie State University (BSU) is a comprehensive university that provides 21st-century learners with a strong foundation for success with a well-rounded academic experience, an inclusive environment, and hands-on learning opportunities. Building on its rich legacy as a training ground for teachers since 1865, the university is committed to providing access to a high-quality education and cultivating emerging leaders who are prepared to succeed in a changing, global society.

As Maryland's first historically black public university, Bowie State University empowers a diverse population of students to reach their potential by providing innovative academic programs and transformational experiences as they prepare for careers, lifelong learning, and civic responsibility. Bowie State University supports Maryland's workforce and economy by engaging in strategic partnerships, research, and public service to benefit our local, state, national, and global communities.

The PHIT program is an innovative program and is developed in partnership with the Office of the National Coordinator (ONC) for Health Information Technology, Health and Human Services (HHS). It is designed to address the shortage of PHIT professionals and the lack of diverse PHIT professionals in the workforce. Hence, the proposed program contributes to the university's mission by empowering "a diverse population of students to reach their potential by providing innovative academic programs"

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and by supporting Maryland’s and the nation’s workforce and economy. Furthermore, the addition of the PHIT program contributes to the achievement of Bowie’s *FY 2019 – FY 2024 Racing to Excellence Strategic Plan*, specifically Goal 1 Academic Excellence, Objective 1.1 High-demand, innovative academic programs.

Since the signing of the Health Information Technology for Economic and Clinical Health (HITECH) Act in 2009, the US health care ecosystems have become increasingly digitalized and connected. With the recent efforts to manage Covid-19 pandemic and the opioid crisis, the acute shortage of public health informatics professionals is revealed. As a result, workforce development to fill this gap is critical and the federal government has this as one of its top priorities and is investing millions of dollars through the American Rescue Plan with emphasis on educating and training more underrepresented students and workers to diversify the workforce (<https://www.hhs.gov/about/news/2021/06/17/hhs-announces-80-million-in-arp-funding-to-bolster-underrepresented-communities-in-public-health-it-workforce.html>).

The proposed program directly addresses this critical need.

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)*

The proposed program will be funded for the first four years by a \$10M grant obtained through the Office of the National Coordinator for Health Information Technology, Health and Human Services. This funding will be used for the development and implementation of the program to include the hiring of a program director, two full time faculty members and support staff as needed. The university has pledged its commitment to support this program after grant funding has ended. (See support letter, Appendix A)

4. *Provide a description of the institution’s commitment to:*
 - a) *ongoing administrative, financial, and technical support of the proposed program*
 - b) *continuation of the program for a period of time sufficient to allow enrolled students to complete the program.*

The proposed Bachelor of Science in Public Health Informatics and Technology program meets and aligns with the university’s FY19-FY24 Strategic Plan. It is aligned with Strategic Goal #1, “Achieve academic excellence supported by curricular and co-curricular experiences” and Objective #1.1, “High-demand, innovative academic programs. The program is funded through the next four years by a grant from the Health and Human Services division and will remain as a signature program at the university.

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

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

The proposed program will provide knowledge about disease interventions and prevention leading to better health for individuals, communities, and the public in general. To improve population and public health, the PHIT program provides information about effective monitoring and surveillance, access to timely and accurate data including big data, information and knowledge while safeguarding privacy and security. As a multi-disciplinary field of study in its early stage of development, PHIT demonstrates the application of theories and practices from computer science, information sciences, and behavioral and management sciences. Therefore, there exists a need for the advancement of knowledge in PHIT both from a technical and non-technical perspective. This need is especially critical in an underserved and underrepresented population.

The societal needs for public health professionals with KSAs in ITS as well as the shortage of public health informatics specialists in public and clinical health settings are well revealed during the Covid-19 response. “The limited number of public health professionals trained in informatics and technology was one of the key challenges the nation experienced during the COVID-19 pandemic,” said Dr. Micky Tripathi, national coordinator for health information technology. Of these limited PHIT professionals, very few are from underrepresented and underserved populations. Hence, there is a need to develop and make the PHIT program accessible to students from underrepresented and underserved populations.

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

The proposed program is well aligned with the 2022 Maryland State Plan for Higher Education, which continues the goals of the 2017-2021 State Plan: Student Access, Student Success, and Innovation. The program integrates the Priorities of Goals 1 and 2 of the new State Plan by creating an opportunity for underrepresented students to participate in a program that aims to fill an employment gap in managing and analyzing public health data, while creating an opportunity for life learning for public health sector professionals who seek a related but new career path.

The proposed PHIT program is also aligned with Goal 3 of the 2022 Maryland State Plan for Higher Education, as the innovative curriculum of this academic program includes artificial intelligence, bioinformatics, biotechnology, biopharma, cybersecurity, data science and analytics, entrepreneurship, informational technology, nanotechnology, modern manufacturing, and robotics (Maryland Higher Education Commission, 2022).

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.*

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2. *Present data and analysis projecting market demand and the availability of openings in a job market to be served by the new program.*
 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.*
 4. *Provide data showing the current and projected supply of prospective graduates.*
1. A public health informatics professional is someone who works in either practice, research, or academia and whose primary work function is to use informatics to improve public and population health. These professionals are in high demand and there are many job opportunities in the field. These include career opportunities at the federal level, the Department of Health and Human Services (DHHS), Centers for Disease Control and Prevention (CDC), Office of Surveillance, Epidemiology and Laboratory Services (OSELs), National Center for Health Statistics (NCHS), and with the Classification and Public Health Data Standards Staff (CPHDSS). Many health systems and industries also need individuals skilled in both health and systems engineering to assist with their electronic health records and other health IT activities.

In the winter of 2022, Bowie State University commissioned Aslanian Market Research (AMR) team of Education Dynamics to conduct an assessment of demand and supply dynamics associated with a Public Health Informatics and Technology program. The report presented findings on similar programs within the State of Maryland and the greater region (consisting of Maryland, Washington, D.C, and Northern Virginia) as well as job outcome data. The results are used to provide answers to the questions under this section along with other sources as indicated below.

PHIT program graduates will be uniquely different from IT specialists as they are required to have knowledge of public health and IT. They may be employed by a wide variety of industries and organizations such as federal, state and local public health agencies, non-profit and non-governmental organizations working on population and public health, hospitals, and businesses and industries working on public health and health care. The level of entry for PHIT graduates is the beginner or tier 1 professional level.

2. The need for public health informatics professionals is very high. The job titles include Public Health Informatics Manager, specialist, system analyst, and data analyst. Most health informatics professionals work in a variety of health care settings including local, state, federal government agencies, public health agencies, non-profit health and medical associations, hospitals, physician group practices, pharmaceutical companies, and insurance companies. MDV has several of these organizations that need these public health informatics professionals.

PHIT managers and professionals fall under the health services and medical managers occupation or computer and information systems managers identified by the Department of Labor (<https://www.bls.gov/ooh/management/computer-and-information-systems-managers.htm>), where the former is projected to grow much faster than average and the latter is projected to grow faster than average. The job demands for Maryland and USA are presented as follow:

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According to the Maryland Occupational Projections 2018 - 2028, - Workforce Information and Performance (<https://www.dllr.state.md.us/lmi/iandoproj/maryland.shtml>), the number of jobs in Maryland for computer and information systems managers increases by about 13% through 2028, for information security analysts, the increase is about 40% through 2028, for Medical and Health Services Managers, the increase is about 22% through 2028, and for Environmental Scientists and Specialists, including Health specialists, the increase is 13%. The job prospective for graduates with bachelor degrees from both the computing and health industries is above average when compared to all other fields.

According to the department of Labor Occupational projections, 2020-30 (<https://www.bls.gov/emp/tables/emp-by-detailed-occupation.htm>), the number of jobs for computer and information systems managers will increase by about 10.9% by 2030, for information system analysts by 7.0%, for information security analysts by 35%, for Medical and Health Services Managers by 32.5 %, for Environmental Scientists and Specialists, including Health, the increase will be by 8.4%, community health workers by 22%, Epidemiologists by 29.5%, Data Scientists by 31.4%, and for Health information technologists, medical registrars, surgical assistants, and healthcare practitioners and technical workers, by 10.5%.

- 3. Number of Jobs in the Region:** Within the occupation used for this analysis, there was a total of 113,457 jobs that required at least a bachelor's degree for employment in 2020. This is only 45 percent of the total job market. Another 25 percent of the job market is comprised of those who have earned a master's or doctoral degree. This dovetails with earlier data indicating that an advanced degree is important for many who enter this career area. The bachelor's degree employment market is 18 percent above the national average.

Number of Annual Openings in the Region: Within the region, there were 12,005 job openings (37 percent) that require at least a bachelor's degree for employment in 2020. Another 25 percent of openings were for those with advanced degrees.

Job Growth in the Region: In the next five years, 2020-2025, BLS predicts a regional growth of 8.5 percent, which is greater than the expected national growth of 8.0 percent.

Job Postings in the Region: There were 65,315 unique job postings within the region. The number of job postings is taken by "scraping" job boards to see which associated SOC code occupations require a bachelor's degree for employment. While this number of job postings outpaces the number of completions in Maryland, graduates will have to compete with those who come to the region from further flung areas and those who completed degrees in other topics. Note that this 65,315 is about half of the postings in the region. Another 20 percent of jobs are tailored for those with advanced degrees.

Job Postings by Organization: Technology and health organizations have the largest numbers of job postings. These range from technology consulting (Leidos, CACI International) to health positioned organizations such as Anthem, Johns Hopkins, AstraZeneca, and Travelers.

- 4. Current and projective supply of prospective graduates:** The table below presents the results of market research conducted by Education Dynamics on programs similar to PHIT. Across all bachelor level programs, regardless of format, institutions operating within the region saw a 225 percent increase in the number of completions from 2013-2020 within the Public Health Informatics CIP codes.

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Additionally, across the CIP codes used in this analysis, there has been consistent growth each year from 2013-2020. Note that there were no distance education completions in 2020. All completions in 2020 were in-person formats.

Year	2013	2014	2015	2016	2017	2018	2019	2020	% Change 2013-2022
No. of completions	192	208	262	338	508	521	585	624	225%

For the enrollment landscape among institutions located within the state of Maryland, the trends match the completion data as indicated in the table below.

Year	2013	2014	2015	2016	2017	2018	2019	2020
Estimated Enrollment	1152	1248	1572	2028	3054	3126	3510	3744

In 2020, across all degree levels, institutions in Maryland had 1,627 total completions. Across all formats, three institutions in MD offered programs at the bachelor level at the CIP codes under investigation, accounting for 38 percent of the total market in terms of completions. However, 42 percent of those who completed programs in these CIP codes earned a graduate degree (37 percent masters / five percent doctorate). Another 12 percent earned a post baccalaureate certificate.

Degree Level	Percent of Completions
Award of less than 1 academic year	1%
Award of at least 1 but less than 2 academic years	2%
Associate Degree	5%
Award of at least 2 but less than 4 academic years	0%
Bachelor's Degree	38%
Post baccalaureate certificate	12%
Master's Degree	37%
Post-masters certificate	0%
Doctoral Degree	5%

Racial and Ethnic Completions: In 2019, across all formats, students who identify as white made up the largest proportion of completions in the CIP codes under investigation (34%) followed by African Americans, 28%, Asians, 21%, and Latinos, 10%. There is a gap to be addressed in order to produce diverse PHIT professionals.

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.*

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The proposed BS in PHIT is a unique program that uses KSAs from Public Health, Information Science and Information Technology. When it is approved, it will be the first such program in the state of Maryland. A review of the Maryland Higher Education Commission’s listing of academic programs in PHIT and related fields revealed that there is no BS program in PHIT. Programs in related fields include the BS in Health Information Management at Coppin State University, BS in Bioinformatics at Bowie State University and Bioinformatics and Computational Biology at UMBC. The program at Coppin State focuses on the application of information technology and management for healthcare as presented on the website as: “Health information management (HIM) is the study and practice of how we use data to provide and improve quality patient care. In our increasingly digital society, data management needs are also increasing. By studying HIM, you’ll build skills in business, economics, operations, scientific inquiry, and technology—allowing you to navigate the complexity of any healthcare organization.” ([Health Information Management | Coppin State University](#)). The bioinformatics programs at Bowie State University and UMBC are concerned with the acquisition, storage, analysis, and dissemination of biological data, most often DNA and amino acid sequences (www.umbc.edu). Both programs are different from the proposed PHIT program which focuses on public health data and applications of computing science and technology.

There are six Bachelor of Science programs in Public Health in Maryland. They are at Hood College, Johns Hopkins, Salisbury, Towson, UMCP and UMBC. The proposed PHIT program is different from these programs because it focuses on applications of informatics and information technology to support and advance public health. Furthermore, BSU’s proposed program serves a different demographic and economic group with a primary focus on minorities, which is an important need to fill in STEM and STEM related fields. Graduates from the AA degree in health information and technology, public health and related health or IT programs (see Table below) will be able to transfer to the proposed BS in PHIT program.

Table 1. BS in Public Health

Institution	Program	Degree
Hood College	PUBLIC HEALTH	Bachelor's Degree
Johns Hopkins University	PUBLIC HEALTH	Bachelor's Degree
Salisbury University	PUBLIC HEALTH	Bachelor's Degree
Towson University	PUBLIC HEALTH	Bachelor's Degree
University of Maryland, College Park	PUBLIC HEALTH SCIENCE	Bachelor's Degree
University of Maryland, Baltimore County	PUBLIC HEALTH	Bachelor's Degree

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Table 2. AA in Public Health, Healthcare, Health Information and Technology Programs

Institution	Program	Degree
Anne Arundel Community College	PUBLIC HEALTH PROFESSIONS	AssociateDegree
Baltimore City Community College	HEALTH INFORMATION TECHNOLOGY	AssociateDegree
Cecil College	HEALTHCARE SCIENCE	AssociateDegree
Cecil College	PUBLIC HEALTH	AssociateDegree
Chesapeake College	HEALTH, FITNESS AND EXERCISE SCIENCE	AssociateDegree
College of Southern Maryland	HEALTH INFORMATION MANAGEMENT	AssociateDegree
College of Southern Maryland	PRE-PROFESSIONAL HEALTH SCIENCE	AssociateDegree
Community College of Balt County	ALLIED HEALTH	AssociateDegree
Community College of Balt County	HEALTH INFORMATICS & INFORMATION TCHNLGY	AssociateDegree
Hagerstown Community College	EXERCISE SCIENCE AND HEALTH	AssociateDegree
Hagerstown Community College	HEALTH INFORMATION MANAGEMENT	AssociateDegree
Harford Community College	COMMUNITY HEALTH PROMOTION	AssociateDegree
Howard Community College	HEALTH CARE FOR THE PROFESSIONAL	AssociateDegree
Howard Community College	PUBLIC HEALTH	AssociateDegree

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Montgomery College-All Campuses	BEHAVIORAL HEALTH	Associate Degree
Montgomery College-All Campuses	HEALTH INFORMATION MANAGEMENT	Associate Degree
Montgomery College-All Campuses	PUBLIC HEALTH SCIENCES	Associate Degree
Prince George's Community College	HEALTH INFORMATION MANAGEMENT	Associate Degree
Prince George's Community College	HEALTH NAVIGATOR	Associate Degree
Prince George's Community College	PUBLIC HEALTH SCIENCE	Associate Degree

2. Provide justification for the proposed program.

The proposed BS in PHIT program is the first in the state of Maryland to fill the workforce demand in PHIT. It also allows graduates from community colleges with degrees in health science, health IT, Health Information Management, and related fields to transfer and complete the BS in PHIT.

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.

Bowie State University is one of four Historically Black Institutions (HBIs) in the state of Maryland. According to data, Bachelor of Science degrees in public health are primarily awarded by non-HBIs in the state of Maryland (refer to Table 1). Therefore, this program wouldnot adversely impact current high-demand programs at HBIs in the state.

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.

Bowie State University is the oldest Historically Black Institution in Maryland and continues to serve an under-represented minority population of students. The university promotes a holistic and coordinated approach to student success and seeks to enhance the campus culture of diversity, inclusion and civic engagement. The goals of this new program are to meet the demand for new educational options for students while increasing the number of African American/Black public health professionals across the region.

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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.*

The curriculum follows the core and foundational competencies set by CAHIIM as applied to public health informatics and technology, public health competencies specified by the Council on Education for Public Health, and emerging PHI competencies identified from recent literature (Wholey and et. Al., 2018, and Joshi and et al., 2021).

It was developed using a multi-disciplinary team of faculty from health sciences, computer science, information science and systems and is supported by the PHIT cooperative grant. This grant supported a successful team of faculty working collaboratively to develop PHIT courses and the program proposal. Input from ONC/HHS, Consortium members and current students on the proposed program goals, objectives and curriculum was provided through several presentations and discussions.

A program director/coordinator from the Department of Health Science (new department under development) in the College of Professional Studies will oversee the program. The coordinator will work collaboratively with the Nursing, Information Systems and Computer Science program coordinators in the recruitment, enrollment, course offerings, teaching and advisement of prospective students. The BS in PHIT program will be delivered via face-to-face modality.

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

This program targets learners who seek a Bachelor of Science degree in PHIT. The program's educational objectives and learning outcomes are presented below.

Educational objectives

- To educate, train and place students in PHIT in a variety of health care settings including federal government agencies, public health agencies, public health-focused non-profits including non-profit health and medical associations, hospitals, physician group practices, pharmaceutical companies, and insurance companies.
- To increase the number of public health professionals trained in public health and informatics.
- To increase the number of underrepresented communities within the public health IT workforce.
- To prepare graduates for any of the following industry certifications from AHIM: RHIA (Registered Health Informatics Administrator) CHDA (Certificated for Health Data Analyst), CHPS (Certified in Health Care Privacy and Security) as described at <https://www.ahima.org/certification-careers/certifications-overview/>.

Student Learning Outcomes:

After completion of the program, students will be able to:

1. Explain core public health functions, workflows, data, associated theories, methods, best practices and ethical and legal issues such as privacy and security.

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2. Apply systems thinking to public health informatics issues.
3. Perform data management for population and public health including registries and other relevant data sources.
4. Analyze data related to population and public health including registries and dashboards for surveillance and health assessment functions using appropriate data management and analytic tools such as Python or R.
5. Evaluate and select health information technology and applications including EHR, EMR, PHR and Registries.
6. Utilize strategies and solutions that ensure confidentiality, security, and integrity.
7. Apply informatics standards appropriately for system interoperability and data/information exchange and contribute to standards development efforts.
8. Apply project management principles to manage and direct health informatics projects.
9. Communicate effectively, both verbally and in writing, using reports, technical documents and presentations.

Core Competencies:

After the completion of the program, learners/students will develop the following competencies in:

- The foundations of biological and life sciences and the concepts of health and disease.
- Public Health Organizations, health functions, workflows and data as well as associated theories, methods, best practices relevant to the application of informatics.
- The basic concepts, methods, and tools of public health data collection, use, and analysis
- Public Health Data Management and Analytics.
- Public Health Data, Information and Knowledge Access, Use, Disclosure, Privacy, Security.
- Informatics standards including classification systems, clinical vocabularies and nomenclatures and the impact on the health care continuum.
- Effective Communication and Presentation Skills: communicate effectively, both verbally and in writing as well as visually.
- Leadership and Project Management Skills.
- Teamwork and Collaboration: Ability to work in an inter-professional, dynamic environment as part of a collaborative and high-functioning team.
- Public health emergency preparedness and response.
- the socioeconomic, behavioral, biological, environmental, and other factors that impact human health and contribute to health disparities and health equity.
- Public health reporting and the use of fast healthcare interoperability resources and standards for exchanging health care information electronically.

3. *Explain how the institution will:*

- a) *provide for assessment of student achievement of learning outcomes in the program*
- b) *document student achievement of learning outcomes in the program*

The program will follow BSU's assessment plan for undergraduate programs and assessment protocols. A 5-year assessment plan will be developed by the program coordinator with input

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from program faculty. A course-embedded assessment strategy, involving rubrics, will be used. In addition, the capstone project course, where students will synthesize, integrate, and/or apply their knowledge and skills, will be used to assess the desired student learning outcomes.

Assessment results are compiled by program faculty each semester and managed by the Program Chair and the Program Coordinator. The data are reported to the BSU’s Center for Academic Programs Assessment each year for review by internal peer evaluators. The full academic program review occurs every seven years in accordance with internal requirements and those of the University System of Maryland. Faculty members are evaluated annually according to parameters in the Faculty Handbook and BSU Policies and Procedures. Student course evaluations are administered each semester by the Office of Planning, Analysis and Accountability. Course evaluation results are shared with deans, department chairs and faculty to inform course and instructional improvements.

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

The BS in PHIT program will include 46 credits of General Education Requirements for the first two years. Existing General Education courses will be used, and these requirements are consistent with COMAR. 74 credits of core courses complete the program requirements for a total of 120 credits. The four-year plan of study for the program is presented in Appendix A. Table 3 below provides a list of courses with title, semester credit hours and course descriptions. The program requirements are:

Admission requirements: (BSU UG catalog for admission)

Graduation requirements: Minimum of C grade in all core courses, ENGL 101, 102, COSC 110 and DANL 280.

Table 3: List of All Courses			
Course No.	Course Title	Semester Credit Hours	Course Description
General Education Courses: 46 Credit Hours			
Inst. Requirements			
FRSE 101	Freshman Seminar	3	This course explores BSU’s history through engaging experiential and cultural activities, developing critical thinking skills for firm foundations that lead to higher education success.
HEED 102	Life & Health	3	This course explores scientific and philosophical applications of various health practices. Emphasis is placed on areas of nutrition, mental health, human sexuality, drugs, diseases, physical fitness and consumer health. It is designed to help students live healthy and satisfying lives.

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English Composition			
ENG 101	Expository Writing	3	This course teaches the rhetorical, analytical, and comprehension skills necessary for academic success.
ENG 102	Argument and Research	3	Argument and Research builds on the skills developed in Expository Writing (ENGL 101), focusing on analysis, synthesis and evaluation, logical thinking, the techniques of argument, writing about literature, and preparation of the documented essay.
Natural Science			
BIOL 102	Introduction to Biology	4	This course is designed to introduce the concepts of cellular and molecular biology, basic chemistry, the chemistry of life, and genetics.
Natural Science II		3	
Mathematics			
MATH 125 OR MATH 141	College Algebra Or Pre-calculus	3	This course explores applications of polynomial, rational, algebraic, exponential, and logarithmic functions.
Social & Behavioral			
SOCI 101	Introduction to Sociology	3	This course is a survey of basic concepts and formulations in sociology, such as functional, conflict, and interaction perspectives, as they are applied to the study of structure and process in society, from the group to the institutional level.
PSYC 101	General Psychology	3	This course is an introduction to basic research and theories in the field of psychology, including principles of learning, memory, brain and behavior relationships, developmental and social psychology, psychological measurement, and an overview of personality and psychological disorders and treatment.

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Technology			
COSC 110	Computer Literacy & Applications	3	This course is an introduction to fundamental concepts and applications of computing, designed for students with no prior training in computer use.
Arts and Humanities			
COMM 101	Oral Communication	3	This course is designed to provide theory and practice in the basic oral skills necessary for effective communication.
Arts & Humanities Elective	Any course from ENGL, SPAN, ART, COMM, MUSC, PHIL, THEA, FRENCH	3	
GenEd Electives			
DANL 280 (Gen Ed Elective 1)	Fundamentals of Data Science and Analytics:	3	This course explores data types and structures, tools, cycles of data processing, big data sources, data science process (data flow, data curative, and data analytics) and the associated ethics and challenges such as availability, reliability/quality, privacy and security.
Gen Ed Elective II		3	
Gen Ed Elective III		3	

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Public Health Sciences: 10 courses and 31 credit hours			
IDIS 240	Medical Terminology	3	This course introduces students to common medical terms in health care. Students learn principles of medical word building and terms specific to the human body systems, standardized medical abbreviations, acronyms, and meanings associated with these systems. Basic examination procedures and positions, common blood, urinalysis lab, and diagnostic tests are included.
NURS 320	Cultural Diversity and Special Populations in Health Care	3	The focus of this course is on diverse populations in health care and factors of diversity which include culture, race, language and communication, that impact health and the care of the targeted population. This course is designed to help students recognize the significance of diversity, and develop cultural sensitivity and competence that will enhance the ability to care for, and meet the needs of, the ever-changing diverse populations in health care.
PHSC 200	Introduction to Human Diseases	3	This course is an introduction to human diseases and examines the origin and progression of disease processes which have a significant impact globally and within our society. Current interventions being used to effectively manage those diseases will be discussed. Students will develop the ability to apply the concepts of human diseases to real world situations.

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BIOL 311	Anatomy & Physiology	4	This course focuses on the structure and function of the human body from molecular to whole individual level, providing current principles of anatomical terminology and techniques, histology, and the integumentary, skeletal, muscular, nervous, and sensory systems. The effects of age, stress and pathology (disease) on normal systems are incorporated throughout the course.
PHSC 304	Fundamentals of Epidemiology	3	This course introduces students to the field of public health and epidemiology, emphasizing the socio-cultural factors associated with the distribution and etiology of health and disease.
PHSC 300	Health Equity and Social Justice	3	This course will focus on the relationship between social determinants of health and health inequities within the United States. Specifically, students will examine past and present social and ethical issues which affect health outcomes among the most vulnerable populations.
PHSC 310	Organization of Healthcare Facilities	3	This course will explore the healthcare delivery system and its components. This will include a comprehensive look at its history and development, as well as the economic, social, political, and cultural influences which shape the structure within a healthcare facility.
PHSC 350	Public Health Perspectives	3	This course explores the art and science of disease prevention, prolonging life, and promoting the health of not only an individual but entire communities or populations of people.

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PHSC 420	Public Health Strategic Planning	3	This course will prepare students to apply knowledge of public healthcare organizations, health determinants, public health systems and policy for public health strategic planning. They will use public health data analytics, utilization metrics, and demographic data to create a strategic plan for addressing a current public health problem.
PHSC 406	Public Health Research	3	This course will prepare students to critically evaluate research evidence and methodologies used in public health policy making, resource allocation and delivery systems. Students will be prepared to analyze and design practical research methodologies to evaluate contemporary public health issues and learn the necessary concepts and skills required for research design, implementation, data analysis, statistical testing, and results reporting.
Data Science and Analytics, Information Technology and Systems: 14 courses and 43 credit hours			
MATH 155 or PSYC 204	Statistics	3	This course is an introduction to basic descriptive and inferential statistics as they are utilized in psychology and education.
PHIT 285	Introduction to Public Health Informatics and Technology	3	This course is an introduction to the application of informatics and technology in public health. It provides an overview of specialized public health applications such as bio-surveillance, registries, and epidemiological databases and covers the use of clinical data sources to improve public health outcomes.
PHIT 320	Public Health Predictive Analytics	3	This course will explore the use of predictive analytics to find patterns in public health data which will identify risks and opportunities.

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PHIT 480	Big Data and Analytics for Public Health	3	The course introduces the learner to Big Data in healthcare, which refers to the abundant health data amassed from numerous sources including electronic health records (EHRs), medical imaging, genomic sequencing, payer records, pharmaceutical research, medical devices, and more. The learner will be able to understand how Big Data analytics in public health can generate new knowledge, improve clinical care and streamline public health surveillance.
PHIT 485	Special Topics in PHIT	3	This course will provide students with advanced knowledge about selected current topics in public health and informatics. Students will examine controversial topics in the field of PHIT to acquire alternative and challenging perspectives on these topics.
PHIS 305	Programming for Healthcare	3	This course introduces students to the object-oriented (OO) approach to programming with emphasis on solving public health care problems.
PHIS 361	Public Health Information Systems Analysis and Design	3	This course will provide students with an understanding of the principles involved in the analysis and design of public health management information systems (HMIS).
PHIS 362	Public Health Data Management	3	This course will provide an understanding of how data resources can be managed to support decision-making within healthcare organizations. It will examine the use, development, and implementation of

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			databases and how the database environment is used to support decision-making as well as public and healthcare data governance. Database design and implementation issues will be addressed from both logical and physical perspectives. In addition, strategic and administrative issues of databases will be considered. The course covers SQL and a database management system.
PHIS 367	Fundamentals of Public and Population Data Privacy and Security	3	This course provides the foundation for understanding the key issues associated with information security and assurance with special emphasis on the acquisition and usage of protected public health data and Fair Information Practices (FIP).
PHIS 475	Public Health Informatics Project Management	3	This course explores the emerging project process and the management approaches needed to make Public Health Informatics projects successful. Students will compare project management methodologies and analyze strategies including concepts and technologies for health information management (HIM)
PHIS 410	Public Health, Clinical Classifications & Information Systems	3	This course introduces the principles of taxonomy and purposes of controlled terminologies and classification systems used in the United States and internationally in public health. The course is designed to provide a survey of clinical vocabularies and controlled terminologies and classification systems standards commonly used in public health care settings. It will address the importance of standards conformance, design of interoperable data and systems, and the processes, policies and procedures used in the collection, coding, mapping, and modelling of public health data.

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PHIT 490	Internship	4	The Internship provides an opportunity for the student to synthesize, integrate, and apply the practical skills, knowledge, and training acquired throughout the program. Students are engaged in real-world projects for solving real-world problems that involve the application of public health informatics and associated issues. A semester long project is required using informatics tools for supporting public health functions and addressing related issues. Students are placed at sites independently or in a team to acquire practical experience. The internship effort is jointly supervised by a faculty member and/or a manager at the site.
PHSC 450 (Elective)	Special Topics in Public and Population Health	3	This course integrates foundational principles of ethics, social justice, culture, community and diversity to enable students to explore special topics in public and population health. Students will learn and discuss key global health conditions, both communicable and non-communicable. Students will explore how epidemiological transitions, public health challenges and the burden of disease impact public and population health.
PHIT Elective		3	

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

Students in this program will satisfy general education requirements by taking 100-level and 200-level courses, identified as general education courses, required of all Bowie State University students per the BSU course catalog.

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

The program may be certified by the Commission on Accreditation for Health Informatics and Information Management (HIIM) Education (CAHIIM).

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

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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.

BSU's internal process, grounded by the "shared governance principle", for academic program review and approval, has been practiced consistently. This process will be used for the proposed program where department curriculum committees, college curriculum committees, the university curriculum committee, and the faculty senate will review and approve the program proposal. Next, the Provost reviews and approves the program with final approval by the President. Once the program is approved through the USM and MHEC, information on the curriculum, courses, degree requirements, admission requirements, etc. will be added to the university catalog and made available to the university community and the public. Information regarding technical equipment requirements, the learning management system, availability of academic support services, financial aid resources, and costs and payment policies is already available on the BSU web site.

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 Bowie State University's Relations and Marketing (URM) department has the authority to review and approve content about programs and related information before it is posted and shared on the website, social media, pamphlets, flyers, and other media sources. Therefore, the Dean of the College of Professional Studies and Chairs of the Department of Management Information Systems, Nursing and the Department of Computer Science will provide their assurance that advertising, recruiting, and admission materials will clearly and accurately represent the proposed program and the services available. Departments do not represent their programs in any manner other than what is approved by the BSU President and MHEC. If approved, this program will be presented to current and potential students in accordance with program goals, courses, facilities, and services set out by this proposal and BSU administration directives pertaining to all programs.

H. Adequacy of Articulation

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

Bowie State University has articulation agreements with several community colleges in Maryland which creates a seamless transfer structure for students to enter the university. The fusion of academics and enrollment services for transfer students was recently implemented, since many transfer students expressed concern of not knowing the resources on the campus. In addition, the transfer student population was in need of support in order to increase efforts for retention. As a result, Bowie State University has increased the hands-on contact and communication with our partner Community Colleges and interested students. The university has opened up lines of engagement to update and fine-tune our entire process and documents. Also, the university has participated in many webinars that inform aspiring students from the Community Colleges about our academic programs here at Bowie State

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University. Included on the university’s website are academic Transfer Guides, MOUs, Agreements and support documentation that inform students of the academic requirements needed prior to their transfer to Bowie State University. Following are some of the Community Colleges that have partnered with Bowie State so far:

- Anne Arundel Community College
- Baltimore City Community College
- The Community College of Baltimore County
- Montgomery College
- Prince George’s Community College
- Wor-Wic Community College
- College of Southern Maryland

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 faculty member will teach in the proposed program.*

High quality faculty from several disciplines will teach courses in the proposed program. These include faculty from the departments of Nursing, Information Systems, and Computer Science. Twonew full-time faculty members will be hired to teach Public Health Science courses and PHIT courses using funds provided initially by the grant and later, from the University budget. Table 4 provides a list of faculty profiles and courses that they will teach.

Table 4. Faculty Profiles for the PHIT Program Courses

Name	Appointment Type	Degree Title	Field: Specializations	Academic Rank	Status	Courses
Andrew Mangle	Tenure Track	Ph.D	Information Systems: Cybersecurity	Assistant Professor	Full-time	PHIS 367, 475
Rand Obeidat	Tenure Track	Ph.D	Information Systems: Data Science & Analytics; Health Informatics	Assistant Professor	Full-time	PHIS 361, 362, 650, DANL 280, DANL 340
Philip De Melo	Visiting/Research Professor	Ph.D	Mathematics and computer science	Professor	Full-time	PHIT 285,320, 458
Birthele Archie	Tenure Track	DNP	Nursing Practice	Assistant Professor	Full-time	PHSC 406, PHSC 304,

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						NURS 320
Jacqueline Hill	Tenured	Ph.D	Nursing Practice	Professor	Full-time	PHSC 406
Julie Agubokwu	Tenure Track	Ph.D	Nursing Practice	Assistant Professor	Full Time	MGMT 256, PHSC 200, 300 PHSC 350
Denise Jarboe	Tenure Track	DNP	Nursing Practice	Assistant Professor	Full-time	PHSC 304, 420 PHIT 490
Cordelia Obizoba	Tenured	Ph.D	Nursing Practice	Associate Professor	Full-time	PHSC 200, IDIS 240, PHSC 310
Tabita Rigsby-Robinson	Tenure Track	MSN	Nursing Practice	Instructor	Full-time	PHSC 200, 300, 304, 350 IDIS 240
Azene Zenebe	Tenured	Ph.D	Information Systems: Data Science & Analytics; Health Informatics	Professor	Full-time	PHIS 361, 362, 480
Grant Erhuanga	Adjunct	Ph.D	Biomedical Informatics-Health Information Technology	Assistant Professor	Part-time	PHIS 410, 320, 475, 485

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

In addition to attending regional, national and international professional conferences focusing on pedagogy, faculty are also required to attend a Faculty Institute at the beginning of each Fall and Spring semester sponsored by the Center for Excellence in Teaching and Learning. There, faculty are introduced to the most current pedagogies and best practices in higher education along with topics relevant to the academic success of students. BSU offers year-round Blackboard LMS training and several faculty members have been trained or are currently undergoing training for Quality Matters review of online and hybrid courses.

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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 Thurgood Marshall Library of Bowie State University supports the University's mission of teaching and learning with a collection of over 280,000 volumes (physical and electronic), over 700 academic subscription titles, an electronic portal (Research Port) to over 70 databases, as well as videos and DVD recordings, and experienced staff. The Library also promotes information literacy education by collaborating with the university faculty in utilizing current technology and teaching methods to enhance an instructional program that teaches library clientele how to access, evaluate, and utilize information.

As a member of the University System of Maryland and Affiliated Institutions (USMAI), Bowie State also has access to the collections of thirteen university libraries in the state of Maryland. A daily delivery between the participating libraries is provided to assist patrons in obtaining materials from other libraries in the system. In addition, all registered patrons have access to interlibrary loan services, which is a resource-sharing system, for materials not available within the USMAI.

The Library's physical collection of books in the fields are typical in scope and size for a university the size of Bowie State University. This collection is presently serviceable for the instructional and research expectations upon this program's majors. To ensure that this collection is more than sufficient for background reading and research undertakings by students in all of this program's core and elective courses, the program's faculty are making requests for acquisitions of hundreds of additional volumes, and those requests will be fulfilled during the coming academic year.

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.*
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*

Bowie State University delivers a robust technological infrastructure and state-of-the-art classrooms and offices for faculty and staff. The campus is home to a new \$445,500 Cray supercomputer called the Sphinx (housed in the Computer Science Building) awarded through a grant from the Department of Defense U.S. Army Research Office. The University also has several computer labs across campus with each having up to 25 workstations containing standard application software and IBM SPSS Statistics version 23 that supports statistical data analysis and some of the machine learning algorithms.

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Three of the four colleges currently reside in state-of-the-art buildings equipped with several computer laboratories with 25 to 35 PCs designed for flexible, active learning environments which are ideal for independent and collaborative work. The University also houses four additional computer laboratories in the Thurgood Marshall library containing 27 to 35 PCs along with one instructional laboratory.

All faculty (full time, part-time, adjunct) and students at BSU have access to the university’s Blackboard LMS, along with a full-time staff of three who are available for technical issues and support. Furthermore, all faculty, staff and students have access to the MS Office 360 suite of applications including Outlook for communication, TEAMS for collaboration, MS Office, Power BI and more.

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

Resources and Expenditures

Table I projects enrollment for full-time equivalent students and the number of full-time equivalent faculty for the first five years. It is estimated that 15-20 new students will be admitted during the first year, increasing to approximately 60-75 full- and part-time students during years 4 and 5. Graduates from the program are expected by the fourth year.

Table 2 projects expenditures for the new program to include three new full-time faculty, one administrative assistant and two adjunct faculty. Other support staff are already in place in the college. Initial support for program personnel will be provided by the ONC/HHS grant. Additional support will be provided from the university when the grant funding ends.

TABLE 1: RESOURCES					
Resources Categories	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027
1. Reallocated Funds ¹	0	0	0	0	0
2. Tuition/Fee Revenue ² (c+g below)	136,170	272,530	430,355	577,980	759,090
a. #F.T Students	15	30	45	60	75
b. Annual Tuition/Fee Rate ⁴	8734	8909	9087	9269	9454
c. Annual Full Time Revenue (a x b)	131,010	267,270	408,915	556,140	709,050
d. # Part Time Students	1	1	2	2	3
e. Credit Hour Rate ⁵	258	263	268	273	278
f. Annual Credit Hours	20	20	40	40	60

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g. Total Part Time Revenue (d x e x f)	5,160	5,260	21,440	21,840	50,040
3. Grants, Contracts, & Other External Sources ³	160,000	163,200	166,464	0	0
4. Other Sources	0	0	0	0	0
TOTAL (Add 1 - 4)	296,170	435,730	596,819	577,980	759,090

¹ Whenever reallocated funds are included among the resources available to new programs, the following information must be provided in a footnote: origin(s) of reallocated funds, impact of the reallocation on the existing academic program(s), and manner in which the reallocation is consistent with the institution's strategic plan.

² This figure should be a realistic percentage of tuition and fees which will be used to support the new program. Factors such as indirect costs linked to new students and the impact of enrolling continuing students in the new program should be considered when determining the percentage.

³ Whenever external funds are included among the resources, the following information must be provided in a footnote: source of the funding and alternative methods of funding the program after the cessation of external funding.

⁴ Tuition Rate is based on the FY 2022 Tuition and Rate schedule with a 2% increase in subsequent years.

⁵ Credit Hour rate is based on the FY 2022 Tuition Rate schedule with a 2% increase in subsequent years.

TABLE 2: EXPENDITURES					
Expenditure Categories	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027
1. Total Faculty Expenses (b + c below)	301,500	301,500	307,530	313,681	319,956
a. # FTE	3	3	3	3	3
b. Total Salary ¹	225,000	225,000	229,500	234,090	238,773
c. Total Benefits ²	76,500	76,500	78,030	79,591	81,183
2. Total Administrative Staff Expenses (b + c below)	67,000	67,000	68,340	69,707	71,100
a. # FTE	1	1	1	1	1
b. Total Salary ³	50,000	50,000	51,000	52,020	53,060

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c. Total Benefits ⁴	17,000	17,000	17,340	17,687	18,040
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 ⁵	8,500	2,500	2,500	8,500	2,500
5. Library	0	0	0	0	0
6. New or Renovated Space ⁶	7,000	7,000	7,000	7,000	7,000
7. Other Expenses ⁷	19,620	19,620	19,620	19,620	19,620
TOTAL (Add 1 - 7)	403,620	397,620	404,990	418,508	420,176

¹Average salary for Assistant Professors for FY 2023 with a 2% increase in year 3 and subsequent years.

²Average benefits for Assistant Professors for FY 2024 is 34% of salary.

³Current salary for Administrative Assistant II in FY 2024 with a 2% increase in year 3 and subsequent years.

⁴Average benefits for Administrative Assistant II for FY 2024 is 34% of salary.

⁵Equipment – cost for 3 computers on a 3-year replacement cycle and other equipment as needed for yearly program enhancements.

⁶New or Renovated Space – cost for expansion of office space and lab space for new program.

⁷Other Expenses – cost of salary and fringe for two (2) adjunct faculty members.

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.*

This program’s courses and faculty will be evaluated using the BSU end of course evaluation survey each semester. Course-embedded assignments and rubrics will be used to evaluate student learning

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outcomes (SLOs) relevant to a course following the BS in PHIT program learning outcomes assessment plan.

The ongoing end-of-course evaluation survey will track data on students' satisfaction with the PHIT program courses and faculty. This data will be aggregated for the program to assess its effectiveness.

Student retention: Student enrollment numbers for the program will be monitored and the retention rate will be calculated and reviewed each semester.

Cost-effectiveness: Enrollment numbers in various PHIT program classes will be monitored and revenue/cost will be calculated.

Assessments of student learning outcomes: Measured through implementation of the student learning outcomes (SLO) assessment plan.

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.*

As Maryland's first Historically Black Institution, Bowie State University is committed to providing access to high quality higher education to African-Americans and other under-represented minorities. The goals established in the University's Racing to Excellence FY 2019 – FY 2024 Strategic Plan support student achievement and long-term viability of the institution and align with the goals in the *2017-2021 State Plan for Postsecondary Education: Student Success with Less Debt*. Specifically, Bowie continues to support educational opportunity for Marylanders (Success, Strategy 4), engage in a continuous improvement process to ensure that institutional policies and practices support student success (Success, Strategy 5), provide alternative modalities, new programs and pedagogies and streamlined student and academic support services to facilitate timely degree completion (Success, Strategy 6) (Innovation, Strategy 9), integrate high impact practices into the student experience, including career advising and planning into internship experiences (Success, Strategy 7), partner with business, government and other institutions to support workforce development and graduate readiness (Innovation, Strategy 8), and expand support for grant participation and research (Innovation, Strategy 10). Bowie State faculty, staff, students and administrators are engaging in change management strategies and embracing experimentation so that the university can better meet the holistic needs of our students (Innovation, Strategy 11).

Bowie State University has a long-standing commitment to diversity as the institution values and celebrates diversity in all of its forms. The University community believes that its educational environment is enriched by the diversity of individuals, groups and cultures that come together in a spirit of learning. The university fully embraces the global definition of diversity that acknowledges and recognizes differences and advances knowledge about race, gender, ethnicity, national origin, political persuasion, culture, sexual orientation, religion, age, and disability. The University creates positive interactions and cultural awareness among students, faculty and staff through infusing global diversity awareness in the curriculum, expanding co-curricular programming that promotes diversity awareness and maintaining a campus climate that respects and values diversity.

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

This program is in the College of Professional Studies and will be in the new Department of Health Sciences. It has no relationship with a low productivity program identified by the Commission.

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

At this time, the program will be offered in a traditional, face-to-face format.

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Appendix A

**Program of Study – Bachelor of Science in Public Health Informatics and Technology
 (120 Credits)**

FRESHMAN YEAR			
FALL	CREDITS	SPRING	CREDITS
FRSE 101 - Freshman Seminar	3	PSYC 101 - General Psychology	3
ENG 101 – Expository Writing	3	COSC 110 – Computer Literacy & Applications	3
BIOL 102 – Introduction to Biology	4	ENG 102 – Argument and Research	3
MATH 125 – College Algebra or MATH 141	3	Arts & Humanities Elective	3
SOCI 101 – Introduction to Sociology	3	HEED 102	3
	16		15
SOPHOMORE YEAR			
FALL	CREDITS	SPRING	CREDITS
COMM 101 - Oral Communication	3	PHIT 285 – Introduction to Public Health Informatics and Technology: <i>Prerequisites COSC 110 and PHSC 200</i>	3
BIOL 311 – Anatomy & Physiology	4	MATH 155 or PSYC 204 – Statistics	3
PHSC 200 - Introduction to Human Diseases	3	Gen Ed Elective III (MGMT 256)	3
DANL 280 – Fundamentals of Data Science and Analytics: <i>Prerequisite COSC 110 or equivalent (Gen Ed Elective I)</i>	3	Natural Science II	3
Gen Ed Elective II (MGMT 101 – Introduction to Business)	3	IDIS 240 – Medical Terminology	3
	16		15

Bowie State University
Bachelor of Science in Public Health Informatics and Technology New Program proposal

JUNIOR YEAR			
FALL	CREDITS	SPRING	CREDITS
Arts & Humanities Elective	3	PHSC 300 - Health Equity and Social Justice	3
PHIT 320 - Public Health Predictive Analytics - <i>Prerequisite PHIT 285</i>	3	PHIS 305 – Programming for Healthcare – <i>Prerequisite COSC 110</i>	3
PHSC 304 - Fundamentals of Epidemiology	3	PHIS 361 – Public Health Information Systems Analysis and Design - <i>Prerequisites PHIT 285</i>	3
PHSC 310 - Organization of Healthcare Facilities	3	PHSC 350 - Public Health Perspectives	3
PHIS 362 - Public Health Data Management – <i>Prerequisite PHIS 361</i>	3	NURS 320 Cultural Diversity and Special Populations in Health Care	3
	15		15
SENIOR YEAR			
FALL	CREDITS	SPRING	CREDITS
PHSC 420 - Public Health Strategic Planning	3	PHSC 406 - Public Health Research	3
PHIS 410 – Public Health and Clinical Classifications & Information Systems - <i>Prerequisite PHIS 361</i>	3	PHIT 480–Big Data and Analytics for Public Health – <i>Prerequisite PHIS 362</i>	3
PHIT/PHSC Elective Course	3	PHIT 485 – Special Topics in PHIT <i>Prerequisite PHIT 320</i>	3
PHIS 367 – Fundamentals of Public and Population Data Privacy and Security - <i>Prerequisite COSC 110</i>	3	PHSC 490 - Internship	4
PHIS 475 – Public Health Informatics Project Management - <i>Prerequisite PHIT 285</i>	3		
	15		13

Bowie State University
Bachelor of Science in Public Health Informatics and Technology New Program proposal

References

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6. Weiner, J. P. (2018). Public and Population Health Informatics: The Bridging of Big Data to Benefit Communities. *Yearbook of medical informatics*, 27(1), 199–206. <https://doi.org/10.1055/s-0038-1667081>



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

TOPIC: Academic Program Proposal:
Bowie State University: Post-Baccalaureate Certificate in Public Health Informatics

COMMITTEE: Education Policy and Student Life

DATE OF COMMITTEE MEETING: Tuesday, January 10, 2023

SUMMARY: Bowie State University submits for your consideration the proposed Post-Baccalaureate Certificate in Public Health Informatics (PHIS) program. The PHIS at BSU focuses on public and population/community health, disease prevention, and health promotions. Ideally suited for students who hold a bachelor’s degree in Public Health, Health Science, Healthcare, Behavioral Science, Business, Information Systems and Sciences, Computer Science, IT, or other related fields, the program is founded on the existing Master of Science in Information Systems and Master of Science in Nursing programs. It is a multidisciplinary program designed to prepare students with a bachelor’s or higher degree in relevant fields for careers, particularly in PHIS. The curriculum has three core courses focusing on PHIS, a capstone course, and two elective courses. The program may be completed either as a complement to existing BSU graduate programs in information systems, computer science, nursing, MBA, and other graduate programs or as a post-baccalaureate advanced specialization training for members of the current public health, IT, and business workforce. Graduates from this program may work as public health informaticians, managers, specialists, system analysts, data analysts, consultants, or designers/developers in different health systems, hospitals, academia, insurance, pharmacy, and other organizations.

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

FISCAL IMPACT: No additional funds required. The program can be supported by projected tuition and fees.

CHANCELLOR’S RECOMMENDATION: That the Education Policy and Student Life Committee recommend that the Board of Regents approve the proposal from Bowie State University to offer the Post-Baccalaureate Certificate in Public Health Informatics.

COMMITTEE RECOMMENDATION: DATE: January 10, 2023

BOARD ACTION: DATE:

SUBMITTED BY: Joann A. Boughman 301-445-1992 jboughman@usmd.edu



Aminta H. Breaux, Ph.D.

President

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December 1, 2022

Jay A. Perman, MD
Chancellor
University System of Maryland
3300 Metzert Road
Adelphi, Maryland 20783-1690

RE: New Academic Program Proposal – Post-Baccalaureate Certificate in Public Health Informatics

Dear Chancellor Perman,

Please find enclosed a proposal to offer a new Post – Baccalaureate Certificate in Public Health Informatics (PBC in PHIS) program at Bowie State University (HEGIS 070201/CIP 11.0104).

The proposed PBC in Public Health Informatics was developed in partnership with the Office of the National Coordinator (ONC) for Health Information Technology within the Department of Health and Human Services (HHS). The need for public health informatics professionals is very high; studies indicate that preparation beyond the undergraduate degree is important for many who enter public health informatics career. This program is intended to create informatics professionals from underrepresented communities to fill positions as informatics specialists, data analysts, and systems specialists, as well as other related positions in a host of industries, in just one year.

We respectfully request the Board’s consideration of this proposal.

Sincerely,

Aminta H. Breaux

Cc: Dr. Carl B. Goodman, Provost and Vice President for Academic Affairs, BSU
Dr. Joann Boughman, Senior Vice Chancellor, USM
Dr. Darlene Smith, Interim Associate Vice Chancellor, USM
Dr. Cheryl Blackman, Interim Dean, College of Professional Studies, BSU
Ms. Jacqueline M. Cade, Manager of Institutional and Academic Programming, BSU
Ms. Shari Christie, Registrar, BSU
Ms. Gayle Fink, Office of Planning, Analysis, and Accountability, BSU

UNIVERSITY SYSTEM OF MARYLAND INSTITUTION PROPOSAL FOR

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

BOWIE STATE UNIVERSITY

Institution Submitting Proposal

PUBLIC HEALTH INFORMATICS

Title of Proposed Program

Post-Baccalaureate Certificate
Award to be Offered

Fall 2023
Projected Implementation Date

070201
Proposed HEGIS Code

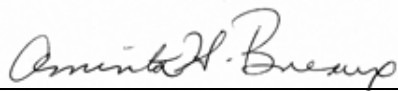
11.0104
Proposed CIP Code

Nursing
Department in which program will be located

Dr. Cheryl Blackman, Interim Dean
Department Contact

301-860-4705
Contact Phone Number

Cblackman@bowiestate.edu
Contact E-Mail Address


Signature of President or Designee

12/1/2022
Date

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

Informatics is the process by which raw data turn into actionable information, which then turn into knowledge using methods, tools and concepts driven from the application of the theory and practices from computer science, information sciences, and behavioral and management sciences. Informatics is central to the practice of public health and healthcare in the 21st century, and this program aims at preparing public health informaticians which are highly in demand. According to AHIMA (American Health Information Management Association), field of health informatics includes clinical informatics, public informatics, consumer health informatics and translational bioinformatics.

The proposed Post-Baccalaureate Certificate in Public Health Informatics (PHIS) at Bowie State University (BSU) focuses on population/community health, disease prevention, and health promotions. It is founded on the Master of Science in Information Systems and the Master of Science in Nursing programs and is designed to prepare learners having a bachelor's degree for careers, particularly in public health informatics. Graduates from this program may work as public health informatics managers, specialists, system analysts, data analysts, consultants, or designers/developers in the different health systems, hospitals, academia, insurance, pharmacy, and other organizations (Joshi and et al, 2021). Public health informaticians are responsible for:

- meeting the needs of those who use data, information and knowledge by eliciting and determining their requirements.
- designing, developing, managing, and evaluating the information technology and systems that are crucial to surveillance, assessment, and assurance practice.
- designing and developing information technology and systems to support effective decision making by public health leaders.
- seeking to support the public health enterprise and improve population health. (Baker, et al., 2016)

The program aims to graduate IT or degree related professionals with public health and informatics Knowledge, Skills and Ability (KSAs), public health professionals with IT and management KSAs, or Business Professionals with IT and public health KSAs to play several roles in advancing public health. It can be either completed as a complementary to a graduate degree in information systems, computer science, nursing, MBA, and other BSU graduate programs or as a post-baccalaureate advanced specialization training for members of the current public health workforce or IT workforce in the health sector.

Targeted Learners/Students: They are learners with a bachelor's degree in Public Health, Health Science, Healthcare, Behavioral Science, Business, Computer Science, IT, or other

related fields. The profile of the potential learners includes those who are highly interested in careers that apply Informatics and Technology to bring quality and better care for communities, the population and public in general. They are graduates or professionals with a:

- Bachelor degree or higher in public or population health, health science, nursing, behavioral sciences, and other related majors. They work as public health professionals, and healthcare professionals including nurses, pharmacists, dentists and doctors. These groups of learners need more education and training in Health Informatics, Information Technology and Systems (ITS) and Management courses.
- Bachelor's degree in IS, Computer Science, IT or related field. These groups of learners need Public Health Science Courses, Health Informatics, and Management.
- Bachelor's degree in business including management, finance, accounting, and marketing. These groups of learners need Public Health Science Courses, Health Informatics, and ITS courses.

Program's relation to BSU's mission:

Bowie State University (BSU) is a comprehensive university that provides 21st-century learners with a strong foundation for success with a well-rounded academic experience, an inclusive environment, and hands-on learning opportunities. Building on its rich legacy as a training ground for teachers since 1865, the university is committed to providing access to a high-quality education and cultivating emerging leaders who are prepared to succeed in a changing, global society.

As Maryland's first historically black public university, Bowie State University empowers a diverse population of students to reach their potential by providing innovative academic programs and transformational experiences as they prepare for careers, lifelong learning, and civic responsibility. Bowie State University supports Maryland's workforce and economy by engaging in strategic partnerships, research, and public service to benefit our local, state, national, and global communities.

The PHIS program is an innovative program which was developed in partnership with the Office of the National Coordinator (ONC) for Health Information Technology, within the department of Health and Human Services (HHS) to address the shortage and lack of diversity among PHIS professionals in the workforce. Hence, the proposed program contributes to the university's mission by empowering "a diverse population of students to reach their potential by providing innovative academic programs" and by supporting Maryland's and the nation's workforce and economy. Furthermore, the addition of PHIS program contributes to the achievement of Bowie's *FY 2019 – FY 2024 Racing to Excellence Strategic Plan*, specifically Goal 1 Academic Excellence, Objective 1.1 High-demand, innovative academic programs.

Since the signing of the Health Information Technology for Economic and Clinical Health (HITECH) Act in 2009, the US health care ecosystems have become increasingly digitalized and connected. With the recent efforts to manage the Covid-19 pandemic and

Opioid crisis, the acute shortage of public health informatics professionals is revealed. As a result, workforce development to fill this gap is critical and the federal government has made it one of its top priorities and is investing millions of dollars through the American Rescue Plan with emphasis on educating and training more underrepresented students and workers to diversify the workforce (<https://www.hhs.gov/about/news/2021/06/17/hhs-announces-80-million-in-arp-funding-to-bolster-underrepresented-communities-in-public-health-it-workforce.html>). The proposed program directly addresses this critical need.

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.*

This program is supported by the ONC/HHS 4-year grant. Implementation of the program is planned for Fall 2023. The grant supported the development of this proposal and will provide funds to hire long-term PHIS faculty and adjuncts to teach and mentor students for the program. Furthermore, the MIS department has received a new PIN to hire a tenure-track faculty for Fall 2023 who will be teaching PHIS courses as well after the end of the grant period. The existing resources in MIS department will also support the program.

4. *Provide a description of the institution's commitment to:*
 - a) *ongoing administrative, financial, and technical support of the proposed program*
 - b) *continuation of the program for a period of time sufficient to allow enrolled students to complete the program.*

The proposed post-baccalaureate certificate in Public Health Informatics (PHIS) meets and aligns with the university's FY19-FY24 Strategic Plan. It is aligned with Strategic Goal #1, "Achieve academic excellence supported by curricular and co-curricular experiences" and Objective #1.1, "High-demand, innovative academic programs. The program is funded over the next three years by a grant from the Health and Human Services division and will remain as a signature program at the university.

BSU is committed to ongoing administrative, financial, and technical support of the proposed program as demonstrated in the following:

- provide a new PIN position for the Information Systems department to hire a faculty member who will provide teaching, research and services in health informatics including PHIS.
- provide a new PIN position for the Nursing/Health science department to hire faculty who will provide teaching, research and services in health sciences.
- existing resources in the MIS department and College of Professional Studies will provide support to the program as both the deans and chairs endorsed the proposal.

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*
 - b) *Societal needs, including expanding educational opportunities and choices for minority and educationally disadvantaged students at institutions of higher education*
 - c) *The need to strengthen and expand the capacity of historically black institutions to provide high quality and unique educational programs*

PHIS will empower disease interventions and prevention leading to better health of individuals, communities, and the public. To improve population and public health, PHIS will enable effective monitoring and surveillance, and provide access to timely and accurate data including big data, information and knowledge while safeguarding privacy and security. As a field of study, it applies the theory and practices from computing science, information sciences, and behavioral and management sciences. It is a multi-disciplinary field and is at its early stage of advancement. Hence, there exists a need for the advancement of knowledge in PHIS both from technical aspects including standardization and interoperability and non-technical aspects including outcome evaluation, privacy, usability, security and ethical use in general and in underserved and underrepresented populations.

The societal needs for public health professionals with KSAs in ITS as well as the shortage of informaticians in public and clinical health settings are well revealed during the Covid-19 response. “The limited number of public health professionals trained in informatics and technology was one of the key challenges the nation experienced during the COVID-19 pandemic,” said Dr. Micky Tripathi, national coordinator for health information technology. Of these limited PHIS professionals, very few are from underrepresented and underserved populations. Hence, there is a need to develop and make the PHIS program accessible to students from underrepresented and underserved populations.

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

The 2022 Maryland State Plan for Higher Education has as one of its goals “equitable access to affordable and quality postsecondary education for all Maryland residents” (2022 Maryland State Plan for Higher Education, p. 28). Further, through an equity framework, the Plan recognizes that State’s legal obligations to diversity and equity in its public education system. Central to Bowie State’s mission, and in alignment with the State Plan, is the goal to empower a diverse population of students to reach their potential by providing innovative academic programs and transformational experiences as they prepare for careers, lifelong learning, and civic responsibility. With its innovative interdisciplinary curriculum that includes artificial intelligence, bioinformatics, biotechnology, biopharma, cybersecurity, data science and analytics, entrepreneurship, informational technology, nanotechnology, modern manufacturing,

and robotics, the proposed Post-Baccalaureate Certificate in Public Health Informatics program promotes student success, innovation, and outcomes that prepare students for careers in public health informatics in just one year.

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.*
2. *Present data and analysis projecting market demand and the availability of openings in a job market to be served by the new program.*
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.*
4. *Provide data showing the current and projected supply of prospective graduates.*

A public health informatician is a professional who works in either practice, research, or academia and whose primary work function is to use informatics to improve public and population health. There are many job opportunities for these individuals, and they are in high demand and are predicted to remain in high demand. The career opportunities are at the federal level, the Department of Health and Human Services (DHHS), Centers for Disease Control and Prevention (CDC), Office of Surveillance, Epidemiology and Laboratory Services (OSELS), National Center for Health Statistics (NCHS), and Classification and Public Health Data Standards Staff (CPHDSS) have job openings for Public Health Informatics Specialists. Many health systems and industries also need individuals skilled in both health and systems engineering to assist with their electronic health records and other health IT activities.

In the winter of 2022, Bowie State University commissioned Aslanian Market Research (AMR) team of Education Dynamics to assess demand and supply dynamics associated with a Public Health Informatics and Technology program. This report presents findings on program areas within the State of Maryland and the greater region (consisting of Maryland, Washington, D.C, and Northern Virginia) to help University stakeholders understand the supply dynamics in the state of Maryland and the job outcome data within the greater region (consisting of Maryland, Washington, D.C, and Northern Virginia). It also presents job outcome data in the region consisting of Maryland, the nearby areas of Washington D.C, and Northern Virginia. The results are used to provide answers to the questions under this section along with other sources as indicated below.

1. PHIS program graduates uniquely differ from IT specialists as they are required to have knowledge of public health, IT and management. They may be employed by a wide variety of industries and organizations. These include employment in federal, state and local public health agencies, non-profit and non-governmental organizations working on population and public health, hospitals, and business and industries working on public health and health care. Some of these agencies at the federal level are the Department of Health and Human Services (DHHS), Centers for Disease Control and Prevention (CDC), Office of Surveillance, Epidemiology and Laboratory Services (OSEL), National Center for Health Statistics (NCHS), and Classification and Public Health Data Standards Staff (CPHDSS).

The level of entry for PBC in PHIS graduates is mid-level managerial or professional level serving as a manager of PHIS projects, PHIS officers, PHIS specialists, and Standardization Specialists.

2. The need for public health informatics professionals is very high. The job titles include public health informatics managers, specialists, system analysts, and data analysts. Most health informatics professionals work in a variety of health care settings including local, state, federal government agencies, public health agencies, non-profit health and medical associations, hospitals, physician group practices, pharmaceutical companies, and insurance companies. The Maryland, DC, and Virginia (MDV) region has several of these organizations that need these public health informatics professionals.

Jobs in the healthcare sector are projected to grow faster than those in the general economy. PHIS managers and professionals fall under the health services and medical managers occupation, or computer and information systems managers identified by department of Labor (<https://www.bls.gov/ooh/management/computer-and-information-systems-managers.htm>), where the former is projected to grow much faster than average and the latter is projected to grow faster than average. The job demands for Maryland and USA are presented as follows.

Accordingly to the Maryland Occupational Projections 2020 - 2030, - Workforce Information and Performance (<https://www.dllr.state.md.us/lmi/iandoproj/maryland.shtml>), the number of jobs in Maryland that requires at least a bachelor degree in computer systems analyst increases by about 12% in 2030, for computer and information systems manager increases by about 12% in 2030, for information security analysts increases by about 37% in 2030, for Medical and Health Services Managers increases by about 27.33% in 2030, for Environmental Scientists and Specialists, including Health increases by 10% in 2030. The job prospective for both in computing and health industry with a minimum of a bachelor degree is above the average for all others.

According to the department of Labor Occupational projections, 2020-30, (<https://www.bls.gov/emp/tables/emp-by-detailed-occupation.htm>) the number of jobs for computer and information systems managers will increase by about 10.9% in 2030, for information system analysts by 7.0%, for information security analysts by 35%, for medical and health services managers by 32.5 %, for environmental scientists and specialists, including health by 8.4%, community health workers by 22%, epidemiologists by 29.5%, data scientists by

31.4%, and for health information technologists, medical registrars, surgical assistants, and healthcare practitioners and technical workers, by 10.5%. Furthermore, the job prospective for both in computing and health industry with a bachelor degree and higher is above the average for all other occupations.

Results of the data analysis by Education Dynamics for the Standard Occupational Classification (SOC) code in fields related to PHIS are presented as follows:

Number of Jobs in Region: Within the occupation used for this analysis, within the region there was a total of 113,457 jobs that require at least a bachelor degree for employment in 2020. This is only 45 percent of the total job market. Another 25 percent of the job market is comprised of those who have earned a masters or doctoral degree. This dovetails with earlier data indicating that an advanced degree is important for many who enter this career area. The bachelor degree employment market is 18 percent above the national average.

Number of Annual Openings in Region: Among the occupations used for this analysis, within the region there was a total of 12,005 job openings that require at least a bachelor degree for employment in 2020, about 37 percent of openings. Again, while this is the plurality of openings, another 25 percent of openings are for those with advanced degrees.

Growth in Region: In the next five years, 2020-2025, BLS predicts a regional growth of 8.5percent, greater than the expected national growth of 8.0 percent.

Job Postings in Region: Within the study region, there were 65,315 unique job postings within the region. The number of job postings is taken by “scraping” job boards to see which associated SOC code occupations require a bachelor degree for employment. While this number of job postings outpaces the number of completions in Maryland, graduates will have to compete with those who come to the region from further flung areas and those who completed degrees in other topics. Note that this 65,315 is about half of the postings in the region. Another 20 percent are tailored for those with advanced degrees.

Job Postings by Organization: Unsurprisingly, given the region, technology and health organizations have the largest numbers of job postings. These range from technology consulting (Leidos, CACI International) to health positioned organizations such as Anthem, Johns Hopkins, AstraZeneca, and Travelers.

Potential supply to the program or the prospective students: These includes professionals or graduates with a bachelor degree and higher from public health, nursing and related health science programs, computer science, information systems and technology. Tables 1 and 2 present the results of market research conducted by Education Dynamics on PHIS. Across all bachelor level programs, regardless of format, institutions operating within the study region saw an increase in the number of completions from 2013-2020 within the Public Health Informatics CIP codes; with an increase of 225 percent. Additionally, across the CIP codes used in this analysis (in aggregate), there has been consistent year over year growth each year from 2013-2020. Note that there were no distance completions in 2020. All completions in 2020 were in non-distance formats.

Table 1. Degree Completion in PHIT related fields

Year	2013	2014	2015	2016	2017	2018	2019	2020	% Change 2013-2022
No of completions	192	208	262	338	508	521	585	624	225%

For enrollment landscape among institutions located within the state of Maryland, the trends match the completion data as indicated in table below.

Table 2. Enrollment landscape in PHIT related fields

Year	2013	2014	2015	2016	2017	2018	2019	2020
Estimated Enrollment	1152	1248	1572	2028	3054	3126	3510	3744

In 2020, across all degree levels, institutions in Maryland had 1,627 total completions. Across all formats, three institutions in MD offered programs (by way of providing completions) at the bachelor's level at the CIP codes under investigation accounting for 38 percent of the total market in terms of completions. However, 42 percent of those who completed programs in these CIP codes earned a graduate degree (37 percent masters / five percent doctoral). Another 12 percent earned a graduate certificate, see Table 3. As such, it appears that a student who completes a program related to Public Health Informatics will need to earn some sort of post-baccalaureate credential, either a degree or certificate. Therefore, there is an opportunity to enroll these students who continue on for even further education, as well as those who enter the workforce (with 38 percent earning bachelor degrees).

Racial and Ethnic Completions: In 2019, across all formats, students who identify as white made up the largest proportion of completions in the CIP codes under investigation (34%). African American are 28%, Asian are 21%, Hispanic or Latino are 10%. These underrepresented groups of graduates and professionals will be targeted to produce diverse PHIS professionals.

Table 3. Degree Awarded

Degree Level	Percent of Completions
Award of less than 1 academic year	1%
Award of at least 1 but less than 2 academic years	2%
Associate Degree	5%
Award of at least 2 but less than 4 academic years	0%
Bachelor Degree	38%
Post-baccalaureate certificate	12%
Masters Degree	37%
Post-masters certificate	0%
Doctoral Degree	0%

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

The proposed PBC in PHIS is a unique 18-credit program that uses knowledge, skills and abilities (KSAs) from Public Health, Information Science and Information Technology. When it is approved, it will be the second in the state of Maryland. The other related program is at Johns Hopkins University (JHU), a graduate certificate program in PHIS. The proposed program is similar to this program but with strong emphasis and coverage in IT infrastructure and data analytics to support and advance public health. Furthermore, BSU’s proposed program serves a different area, demographic, and economic group with a primary focus on minorities, which is an important need to fill in STEM and STEM related fields. Graduates from the BS degree in health information and technology, public health, and related fields (see Table below) will be able to pursue the proposed PBC in PHIS program.

In Maryland, based on the inventory of programs in MHEC database as of November 30, 2002, there are five master's level degree programs in public health, two at JHU. There are sixty master's degree programs related to health, of which close to half of them are at JHU. Graduates of the PBC in PHIS can pursue one of these graduate programs as well.

Table 4. BS and Graduate Programs in PHIS and related fields

Institution	Program	Degree
Johns Hopkins University	PUBLIC HEALTH INFORMATICS	Post-Baccalaureate Certificate
Towson University	HEALTH INFORMATION TECHNOLOGY	Post-Baccalaureate Certificate
Coppin State University	HEALTH INFORMATION MANAGEMENT	Master's Degree
Univ. of Maryland University College	HEALTH INFORMATION MANAGEMENT AND TECHNO	Master's Degree
Johns Hopkins University	PUBLIC HEALTH	Master's Degree
Johns Hopkins University	PUBLIC HEALTH BIOLOGY	Master's Degree
Morgan State University	PUBLIC HEALTH	Master's Degree
Univ. of Maryland, College Park	PUBLIC HEALTH	Master's Degree
University of Maryland, Baltimore City	PUBLIC HEALTH	Master's Degree
Hood College	PUBLIC HEALTH	Bachelor's Degree
Johns Hopkins University	PUBLIC HEALTH	Bachelor's Degree
Salisbury University	PUBLIC HEALTH	Bachelor's Degree
Towson University	PUBLIC HEALTH	Bachelor's Degree
Univ. of Maryland, College Park	PUBLIC HEALTH SCIENCE	Bachelor's Degree
University of Maryland, Baltimore County	PUBLIC HEALTH	Bachelor's Degree

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.*

The proposed program continues Bowie State University's founding commitment to provide access and opportunity to a diverse population of students to function effectively in a highly technical, data-driven and dynamic global community. The ONC/HHS award used to develop the program and curriculum aligns with Bowie's founding commitment to academic excellence.

The proposed program will have a significant impact on fulfilling the call for high-demand programs at HBIs.

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.*

Bowie State University is the oldest Historically Black Institution in Maryland and continues to serve an under-represented minority population of students. The university promotes a holistic and coordinated approach to student success and seeks to enhance the campus culture of diversity, inclusion and civic engagement. The goals of this new program are to meet the demand for new educational options for students while increasing the number of African American/Black healthcare professionals across the region.

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.*

The curriculum follows the core and foundational competencies set by CAHIIM as applied to public health informatics, public health competencies specified by the Council on Education for Public Health, and emerging PHIS competencies identified from recent literature (Wholey and et. Al., 2018, and Joshi and et al., 2021).

It was developed using a multi-disciplinary team of faculty from health sciences, computer science, information science and systems supported by the PHIS cooperative grant. This grant enabled the formation of a successful team of faculty working collaboratively in course development and the program proposal. Input from ONC/HHS, Consortium members and current students on the proposed program goals, objectives and curriculum were gathered during several sessions where we had presentations and discussions.

The program will be overseen by a program director/coordinator from the Department of Nursing, College of Professional Studies. The coordinator will oversee the program and work with other coordinators of relevant programs in recruitment, enrollment, course scheduling and offerings, teaching and advisement and other extra curricula activities. The PBC in PHIS program will be delivered via a face-to-face modality.

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

This program targets learners who seek a PBC in PHIS. The program goals, educational objectives and learning outcomes are presented below.

Program goals

- To educate, train and place students in PHIS in a variety of health care settings including federal government agencies, public health agencies, public health-focused non-profits including non-profit health and medical associations, hospitals, physician group practices, pharmaceutical companies, and insurance companies.
- To increase the number of public health professionals trained in public health and informatics.
- To increase representation of underrepresented communities within the public health IT workforce,
- To help graduates to prepare for any of the following industry certifications from AHIM: RHIA (Registered Health Informatics Administrator) CHDA (Certificated for Health Data Analyst), CHPS (Certified in Health Care Privacy and Security) (<https://www.ahima.org/certification-careers/certifications-overview/>).

Educational Competencies:

The program will be accredited by the Commission on Accreditation for Health Informatics and Information Management (HIIM) Education (CAHIIM). It follows the core and foundational competencies set by CAHIIM as applied for public health informatics, public health competencies specified by the Council on Education for Public Health, and emerging PHIS competencies identified from recent literature (Wholey and et al., 2018, and Joshi and et al., 2021).

After the completion of the program, learners/students will develop the following competencies in:

- The foundations of biological and life sciences and the concepts of health and disease
- Public health organizations, health functions, workflows and data as well as associated theories, methods, best practices relevant to the application of informatics.
- The basic concepts, methods, and tools of public health data collection, use, and analysis
- Public Health Data Management and Analytics.
- Public Health Data, Information and Knowledge Access, Use, Disclosure, Privacy, Security.
- Informatics standards including classification systems, clinical vocabularies and nomenclatures and the impact on the health care continuum.
- Effective Communication and Presentation Skills: communicate effectively, both verbally and in writing as well as visually.
- Leadership and Project Management Skills.
- Teamwork and Collaboration: Ability to work in a multidisciplinary, dynamic environment as part of a collaborative and high-functioning team.
- The underlying science of human health and disease including opportunities for promoting and protecting health across the life course
- The socioeconomic, behavioral, biological, environmental, and other factors that impact human health and contribute to health disparities

Describe the student learning outcomes:

After completion of the program students be able to:

1. Explain core public health functions, workflows and data as well as associated theories, methods, best practices and ethical and legal issues such as privacy and security. (course: PHIS 556).
 2. Evaluate and select Health Information technology and applications for public and population health (course: PHIS 556).
 3. Apply project management principles to manage and direct public health informatics projects (course: PHIS 556)
 4. Recommend strategies and solutions that ensure confidentiality, security, and integrity related (PHIS 600)
 5. Apply informatics standards appropriately for system interoperability and data/information exchange and contribute to standards development efforts in public and population health. (PHIS 656).
 6. Perform data management and analytical support for population and public health including registries and dashboards for surveillance and health assessment functions using appropriate data management and analytic tools such as Python or R. (Course: PHIS 656, PHIS 680)
 7. Communicate effectively, both verbally and in writing using reports, technical documents and presentations. (PHIS 556, 600, PHIS 656, PHIS 680)
3. *Explain how the institution will:*
- a) *provide for assessment of student achievement of learning outcomes in the program*
 - b) *document student achievement of learning outcomes in the program*

The program follows the BSU's assessment plan for graduate level program and assessment protocols. A 5-year assessment plan for this program will be developed by the faculty and will be led by the program coordinator. A course-embedded assessment strategy using rubrics will be used. Furthermore, the capstone project course, where students will synthesize, integrate, and/or apply their knowledge and skills, will be used to assess the desired student learning outcomes.

Assessment results are compiled by program faculty each semester and managed by the Program Chair and the Program Coordinator. The data are required to be reported to the BSU's Center for Academic Programs Assessment each year for review by internal peer evaluators. The full academic program review occurs every seven years in accordance with internal requirements and those of the University System of Maryland. Faculty members are evaluated annually according to parameters in the Faculty Handbook and BSU Policies and Procedures. Student course evaluations are administered each semester by the Office of Planning, Analysis and Accountability. Course evaluation results are shared with deans, department chairs and faculty to inform course and instructional improvements.

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

The PBC in PHIS has 18 credits: 12 credits of core courses, and 6 credit of elective courses. The one-year plan of study for the program are presented in Appendix A. Table 5 below provides a list of courses with title, semester credit hours and course descriptions. The program requirements include admission and graduation requirements.

The admission requirements for this program are:

- Applicants must possess a bachelor degree or higher in public health, nursing, health science, computer science, information technology and system (ITS), or other related fields from an accredited college or university with a GPA 2.5 or higher and adhere to all other criteria in graduate admission policy set by the graduate school.
- Depending upon the applicant’s undergraduate educational background, prerequisite courses on ITS and/or health science may be assigned by admission committee and program coordinator/director.

The graduation requirements are a minimum grade of C in all courses and satisfying all other graduate school requirements.

Table 5. List of Courses

Course No & Title	Credit Hours	Course Description	
PHIS 556– Public Health Informatics (Pre-requisite: INSS 500 and NURS 604)	3	The course reviews the core functions and services of public health and then provides an in-depth coverage of the concepts, methods, approaches and issues related to the application of information technology and systems to population and public health surveillance, assessment, prediction, and responses as well as to health disaster planning and preparation. It covers systems principle and approach for the evaluation, design, and development of health information technology and systems for local, regional, and federal public health agencies and population-based private health care organizations such as integrated delivery systems and health insurance plans. It also covers informatics tools for communication and dissemination of public health information and knowledge.	Core

PHIS 600 - Governance, Ethical and Legal Aspects of Public Health Informatics Pre-requisite: INSS 500 and NURS 604	3	This course covers governance, security, privacy, ethical and legal aspects of PHIS and applications as well as public health policies. Topics include acquisition and usage of protected public health data, FIP (Fair Information Practice), HIPAA regulations and rules, HITEC Act, AI/ML applications in Health, Public Health Policies.	Core
PHIS 656 - Advanced Public Health Informatics Pre-requisite: PHIS 556	3	This course covers advanced topics including data management, data and analytics in syndromic surveillance systems, standards for health data exchange including HL7 (Health Level Seven International), FHIR (Fast Healthcare Interoperability Resources) and DICOM, use cases of FHIR, interoperability of SDOH (Social Determinate of Health) data, interoperability between PH and social care systems as well as applications and issues associate with application of artificial intelligence (AI) and Machine Learning (ML).	Core
PHIS 680– Public Health Informatics Capstone Prerequisites: PHIS 556 and PHIS 600	3	The capstone provides an opportunity for the student to synthesize, integrate, and apply the practical skills, knowledge, and training acquired through the program. Students are engaged in real-world projects for solving real-world problems that involve the application of public health informatics and associated issues. A semester long project is required. Wherever possible and applicable students are placed on sites independently or in a team to acquire practical experience.	Core
PHIS 670 – Health Data Analytics	3	This course covers the data science cycle and public health analytic. It covers health data sources and flow, data curation including combining multiple data streams (e.g., clinical data from electronic health records, lab results, immunizations, demographic data, utilization metrics, claims data, and data from other non-healthcare sources such as SDOH, waste-water, etc.), public health data and analytics systems, visualization, descriptive and predicative analytics, application of machine learning, text analytics,	Elective

		untended bias in predicative models, usability, security, and privacy. It uses popular analytics software, data science and analytics libraries available in Python, R or other programming languages as well as open-source data mining software. A public health data analytic project is required.	
NURS 604 – Epidemiology	3	This course introduces epidemiology and provides an in-depth study of factors that impact the health of populations. It serves as the foundation for understanding medical research, public health, and preventive medicine. Measures of morbidity and mortality used in epidemiology are examined. Research methods used in descriptive and analytic epidemiology will be described. The application of statistical models to test hypotheses and the documentation of results for epidemiological studies in the community, and the screening of diseases in the community will be explored. Content areas in epidemiology that include infectious diseases, occupational and environmental health, molecular and genetic epidemiology, and psychosocial epidemiology are analyzed. Professional issues in epidemiology will be discussed.	Elective
NURS 607 - Advanced Health Assessment	3	This course builds on the undergraduate health assessment course by enhancing the student’s ability to recognize, interpret, and act on abnormal physical assessment findings in adults and children across the wellness-illness continuum. Emphasis is on the synthesis and application of selected theories, principles, and techniques from nursing and the physical and behavioral sciences essential in obtaining the database and in making a differential and nursing diagnosis of patient complaints commonly encountered in primary care settings. (Two hours of lecture and two hours of supervised practice per week)	Elective

NURS 610 - Advanced Pathophysiology	3	This course focuses on the pathophysiology of body systems and clinical manifestations of pathological alterations in structures and functions of body systems. Underlying principles common to all disease processes are addressed. This course provides the foundation for primary care family nurse practitioner practice that includes diagnosis, treatment of minor acute and stable chronic conditions, and the promotion of health of clients.	Elective
INSS 500 – Information Systems	3	This course will cover basic computer and information concepts, including general computer literacy, computer programming, and information concepts appropriate for the MIS professional. In addition, the fundamental statistical concepts necessary for professional information systems work will be reviewed. Emphasis will be placed on hands-on laboratory work that will acquaint the student with various software packages and hardware platforms.	Elective
INSS 615 – Principles and Practices in Information Systems	3	This course introduces the concepts and foundations of information systems development. A systems approach to the architecting, engineering, and management of information systems is emphasized. The course discusses the principles underlying systems modeling, design, construction, testing, and deployment. It provides the state of the art and state of the practice in information systems and software engineering, agile development, software quality and project management, change management, and Web development. The framework and technologies for building software and other systems that exhibit high reliability, usability, security, availability, scalability, and maintainability are presented.	Elective
INSS 640 – Information Systems Analysis and Design	3	This course will provide an in-depth look at all phases of information systems development. Requirement acquisition methodologies will be reviewed and evaluated with respect to different application areas. Logical design will be reviewed and implementation issues will be addressed. Data-centered as well as process-centered approaches to system design will be reviewed. Particular design methodologies, including structured design and objected-oriented design will be discussed. Life cycle as well as heuristic approaches to system development will be examined and discussed. Organizational and behavioral issues with respect to information system development will be examined. An analysis and design project will be required.	Elective

INSS 650 – Data Management	3	This course will examine database concepts and practices as they relate to business environments. Various database structures, including relational and object-oriented, will be discussed. Concepts of distributed database architecture will be explored. Design, development, and implementation of databases will be examined. Organizational issues concerning the implementation of databases will also be examined. The role of data in the decision-making process will be examined. Decision support system architectures will be reviewed, with emphasis on the database component. Issues of intelligent databases will be discussed. A database project will be required.	Elective
Other 500 or above relevant course approved by program director	3		Elective

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

Not applicable. Students are required to have a bachelor degree.

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

The program will seek accreditation by the Commission on Accreditation for Health Informatics and Information Management (CAHIIM) Education (CAHIIM).

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

N/A

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 BSU’s internal process, grounded by the “shared governance”, for academic program review and approval has been in practice consistently and has led to good results thus far. The same process will be used for this proposed program where department curriculum committees, department faculty, college curriculum committees, university curriculum committee, and the senate review and approve the program proposal as well as the new course proposals. Then, the provost reviews and approves it. Finally, with the president’s approval, it will be submitted to

USM and MHEC. Once the program is approved, information on the curriculum, courses, degree requirements, admission requirements, etc. will be added in the catalog by the registrar and made available to the students, parents, and public. Additional information to students on technical equipment requirements, learning management system, availability of academic support services and financial aid resources, and costs and payment policies has been available on the BSU web site already.

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 Bowie State University's Relations and Marketing (URM) department, has the authority to review and approve content about programs and related information before posted and shared on the website, social media, pamphlets, flyers, and etc. Hence, the Dean of the College of Business and Chair of the Department of Management Information Systems provide their assurance that advertising, recruiting, and admission materials will clearly and accurately represent the proposed program and the services available. Departments do not represent their programs in any manner other than what is approved by the BSU President and MHEC. If approved, this program will be represented to current and potential students precisely in accordance with program goals, courses, facilities, and services set out by this proposal and BSU administration directives pertaining to all programs. Current programs offered by BSU have always followed this exacting standard of accurate representation to students and other stakeholders.

H. Adequacy of Articulation

1. *If applicable, discuss how the program supports articulation with programs at partner institutions. Provide all relevant articulation agreements. Not applicable*

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 faculty member will teach in the proposed program.*

A high quality of program faculty from several disciplines will teach the courses. Faculty from nursing and health sciences, information systems, and computer sciences departments will teach in the proposed program. There will be one Public Health Informatics faculty to be hired for a fulltime position initially using the funds from the PHIT grant. Table 6 below provides a list of faculty profiles and a list of courses they will teach.

Table 6. Faculty Profiles for the PHIS Program Courses

Full Name	Appointment Type	Degree Title	Field: Specializations	Academic Rank	Status	Courses Faculty will teach
Andrew Mangle	Tenure Track	Ph.D.	Information Systems: Cybersecurity	Assistant Professor	Full-time	PHIS 600, INSS 675
Rand Obeidat	Tenure Track	Ph.D.	Information Systems: Data Science & Analytics; Health Informatics	Assistant Professor	Full-time	PHIS 556, 656, 680 INSS 500, INSS 640, 650, 662
Philp De Melo	Visiting/ Research Professor	Ph.D.	Mathematics and computer science	Professor	Full-time	PHIS 556, 656, 680
Birthele Archie	Tenure Track	DNP	Nursing Practice	Asst Professor	Full-time	NURS 604, 608, 610
Denise Jarboe	Tenure Track	DNP	Nursing Practice	Asst Professor	Full-time	NURS 604, 608, 610
Tabita Rigsby-Robinson	Tenure Track	Master	Nursing		Full-time	NURS 604, 608, 610
Azene Zenebe	Tenured	Ph.D.	Information Systems: Data Science & Analytics; Health Informatics	Professor	Full-time	PHIS 556, 656, 680 INSS 500, 662, 640, 650
Grant Erhuanga	Adjunct	Ph.D.	Biomedical Informatics-Health Information Technology	Asst Professor	Part time	PHIS 556, 656 INSS 500, 675, 658
A New Hire	Tenure-Track	Ph.D.	Health Informatics	Asst Professor	Full time	PHIS 556, 656, 680

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

In addition to attending local, national and international professional conferences focusing on pedagogy, faculty are also required to attend the Faculty Institute at the beginning of each semester where workshops focusing on pedagogy are offered by the Center for Excellence in Teaching and Learning. BSU offers yearly Blackboard LMS training. Currently, many faculty are undergoing training for Quality Matters review of online and hybrid courses.

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 Thurgood Marshall Library of Bowie State University supports the University's mission of teaching and learning with a collection of over 280,000 volumes (physical and electronic), over 700 academic subscription titles, an electronic portal (ResearchPort) to over 70 databases, as well as videos and DVD recordings, and experienced staff. The Library also promotes information literacy education by collaborating with the university faculty in utilizing current technology and teaching methods to enhance an instructional program that teaches library clientele how to access, evaluate, and utilize information.

As a member of the University System of Maryland and Affiliated Institutions (USMAI), Bowie State also has access to the collections of thirteen university libraries in the state of Maryland. A daily delivery between the participating libraries is provided to assist patrons in obtaining materials from other libraries in the system. Also, all registered patrons have access to interlibrary loan services, which is a resource-sharing system, for materials not available within the USMAI.

The Library's physical collection of books in the fields are typical in scope and size for a university the size of Bowie State University. This collection is presently serviceable for the instructional and research expectations upon this program's majors. To ensure that this collection is more than sufficient for background reading and research undertakings by students in all of this program's core and elective courses, the program's faculty are making requests for acquisitions of hundreds of additional volumes, and those requests will be fulfilled during the coming academic year.

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.*
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*

Bowie State University delivers a robust technological infrastructure and a state of the art classrooms and offices for faculty and staff. The campus is home to a new \$445.500 Cray supercomputer called the Sphinx (housed in the Computer Science Building) awarded through a grant from the Department of Defense U.S. Army Research Office. The University also has several computer labs across campus with each having up to 25 workstations containing standard application software and IBM SPSS Statistics version 23 that supports statistical data analysis and some of the machine learning algorithms.

The three colleges currently reside in a state-of-the-art building equipped with several computer labs with 25 to 35 PCs designed for flexible, active learning environments ideal for independent and collaborative work. The University also houses four additional computer labs in the Thurgood Marshall library containing 27 to 35 PCs along with one instructional lab.

All faculty (full time, part-time, adjunct) and students at BSU have access to the university's Blackboard LMS along with full-time staff of three who are available for technical issues and support. Furthermore, they have access to the MS Office 360 suite of applications including outlook for communication, Teams for collaboration, MS Office, Power BI and more.

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.
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 1 and Table 2 list the fiscal revenues and expenditures that demonstrate adequate resources for this program. The MIS Department and the Nursing Department can administer the majority of the proposed program with existing faculty members. In addition, a new Health Information Systems and Informatics faculty member will be hired using grant funds, one faculty member will be hired in the MIS department using the new PIN received in the 2023 FY budget, along with one adjunct who has expertise in the relevant subject matter. The Nursing department also received one PIN in FY 2023 to support this program. These resources allow for ease in implementation of the program. All other administrative and support services will be embedded into the departments' existing resources.

Table 1: Resources and Narrative Rationale					
Resource Categories	Year 1	Year 2	Year 3	Year 4	Year 5
1. Reallocated Funds	0	0	0	0	0
2. Tuition/Fee Revenue (c+g below)	106,662	108,795	110,971	113,190	171,319
a. #F.T Students	10	10	10	10	15
b. Annual Tuition/Fee Rate (18 crd/yr) (in-state graduate rate is) get graduate rate=573.45	10,322	10,529	10,739	10,954	11,173
c. Annual Full Time Revenue (a x b)	103,221	105,285	107,391	109,539	167,595
d. # Part Time Students	5	5	5	5	5
e. Credit Hour Rate (tuition + fees)	\$573.45	\$584.92	\$596.62	\$608.55	\$620.72
f. Annual Credit Hours	6	6	6	6	6
g. Total Part Time Revenue (d x e x f)	3,441	3,510	3,580	3,651	3,724
3. Grants, Contracts, & Other External Sources	140000	140000	140000	140000	140000
4. Other Sources	0	0	0	0	0
TOTAL (Add 1 - 4)	246,662	248,795	250,971	113,190	171,319

Reallocated Funds: N/A

Annual Tuition/Fee Rate reflects FY23 approved rates

Credit Hour Rate reflects FY23 graduate per credit hour rate and fees with a 2% increase in the subsequent years.

Grants:

Other Sources: N/A

TABLE 2: PROGRAM EXPENDITURES AND NARRATIVE RATIONALE					
Expenditure Categories					
1. Total Faculty Expenses (b + c below)	134,967	137,666	140,420	143,228	146,093
a. # FTE	1	1	1	1	1
b. Total Salary	100,000	102,000	104,040	106,120.8	108,243.21
c. Total Benefits	34,967	35,666.34	36,379.67	37,107.26	37,849.41
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 Contractual Adjunct /Staff Expenses (b + c below)	7,560	7,560	7,560	15,120	15,120
a. # FTE	1	1	1	2	2
b. Total Salary	7,000	7,000	7,000	14,000	14,000
c. Total Benefits	560	560	560	1,120	1,120
4. Equipment					
5. Marketing/Advertising	1,500	1,000	1,000	1,000	1,000
6. New or Renovated Space	0	0	0	0	0
7. Other Expenses	12,000	12,000	12,000	12,000	12,000
TOTAL (Add 1 - 7)	156,027	158,226	160,980	171,348	174,213

1-Full-time Faculty: A new PIN is allocated for an MIS faculty

2-Admin Staff: 0

3-Assumes one adjunct in years 1-3 and two in years 4-5. Average Salary for Adjunct Faculty at \$3,500 per course/semester plus 8% for fringe benefits

4- Equipment: N/A

5- Marketing and advertising costs to market program

6-New or Renovated Space: N/A

7-Average annual scholarship of \$12,000 per year.

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.*

This program's courses and faculty will be evaluated using the BSU end of course evaluation survey completed by students each semester and undertaken by OPAA (Office of Planning, Analysis and Accountability) of the university. Chair and peer evaluations of faculty at least once per academic year will be done. Furthermore, the ongoing end-of-course evaluation survey will track data on students' satisfaction with the PHIS program courses and faculty. This data will be aggregated by program coordinator and chair for the program to assess its effectiveness.

Course-embedded assignments and rubrics will be used to evaluate student learning outcomes (SLOs) relevant to a course following the plan for the PBC in PHIS program learning outcomes assessment.

Student retention: Student enrollment numbers for the program will be monitored and retention rate will be calculated accordingly by the program coordinator with the support of the OPAA of the university.

Cost-effectiveness: enrollment numbers in various PHIS program classes will be monitored and revenue/cost will be calculated.

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.*

As Maryland's first Historically Black Institution, Bowie State University is committed to providing access to high quality higher education to African-Americans and other under-represented minorities. The goals established in the University's Racing to Excellence FY 2019 – FY 2024 Strategic Plan support student achievement and long-term viability of the institution and align with the goals in the *2017-2021 State Plan for Postsecondary Education: Student Success with Less Debt*. Specifically, Bowie continues to support educational opportunity for Marylanders (Success, Strategy 4), engage in a continuous improvement process to ensure that institutional policies and practices support student success (Success, Strategy 5), provide alternative modalities, new programs and pedagogies and streamlined student and academic support services to facilitate timely degree completion (Success, Strategy 6) (Innovation,

Strategy 9), integrate high impact practices into the student experience, including career advising and planning into internship experiences (Success, Strategy 7), partner with business, government and other institutions to support workforce development and graduate readiness (Innovation, Strategy 8), and expand support for grant participation and research (Innovation, Strategy 10). Bowie State faculty, staff, students and administrators are engaging in change management strategies and embracing experimentation so that the university can better meet the holistic needs of our students (Innovation, Strategy 11).

Bowie State University has a long-standing commitment to diversity as the institution values and celebrates diversity in all of its forms. The University community believes that its educational environment is enriched by the diversity of individuals, groups and cultures that come together in a spirit of learning. The university fully embraces the global definition of diversity that acknowledges and recognizes differences and advances knowledge about race, gender, ethnicity, national origin, political persuasion, culture, sexual orientation, religion, age, and disability. The University creates positive interactions and cultural awareness among students, faculty and staff through infusing global diversity awareness in the curriculum, expanding co-curricular programming that promotes diversity awareness and maintaining a campus climate that respects and values diversity.

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

Not applicable

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

At this time, the program will be offered in a traditional, face-to-face format.

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Appendix A – Program of Study

POST-BACCALAUREATE CERTIFICATE– PUBLIC HEALTH INFORMATICS (PHIS)
TOTAL CREDITS (credits) = 18

FIRST YEAR			
FALL	credits	SPRING	credits
<p>PHIS 556– Public Health Informatics Pre-requisite: Foundational Knowledge in IT and Public Health (INSS 500 and NURS 604) The course reviews the core functions and services of public health and then provides an in-depth coverage of the concepts, methods, approaches, and issues related to the application of information technology and systems to population and public health surveillance, assessment, prediction, and responses as well as to health disaster planning and preparation. It covers the evaluation, design, and development of health information technology and systems for local, regional, and federal public health agencies and population-based private health care organizations such as integrated delivery systems and health insurance plans as well as the application of data science and analytics (DSA) for public health. It also covers informatics tools for communication and dissemination of public health information and knowledge.</p>	3	<p>PHIS 656 - Advanced Public Health Informatics Pre-requisite: PHIS 556 This course covers advanced topics including data management, data and analytics in syndromic surveillance systems, standards for health data exchange including HL7 (Health Level Seven International), FHIR (Fast Healthcare Interoperability Resources) and DICOM, use cases of FHIR, interoperability of SDOH (Social Determinate of Health) data, interoperability between PH and social care systems as well as applications and issues associate with application of artificial intelligence (AI) and Machine Learning (ML).</p>	3
<p>PHIS 600 - Governance, Ethical and Legal Aspects of Public Health Informatics Pre-requisite: INSS 500 and NURS 604 This course covers governance, security, privacy, ethical and legal aspects of PHIS and applications as well as public health policies. Topics include acquisition and usage of protected public health data, FIP (Fair Information Practice), HIPAA regulations and rules, HITEC Act, AI/ML applications in Health, Public Health Policies</p>	3	<p>PHIS 680– Public Health Informatics Capstone Prerequisites: PHIS 556 and PHIS 600 The capstone provides an opportunity for the student to synthesize, integrate, and apply the practical skills, knowledge, and training acquired through the program. Students are engaged in real-world projects for solving real-world problems that involve the application of public health informatics and associated issues. A semester long project is required. Wherever possible and applicable students are placed on sites independently or in a team to acquire practical experience.</p>	3
PHIS Elective #1	3	PHIS Elective #2	3

Bowie State University
Post-Baccalaureate Certificate in Public Health Informatics
(PHIS)
New Program Proposal

Elective Courses

Select **two** elective courses in consultation with a Program Coordinator/director.

- i. **Public Health/Nursing and Behavioral Health (BH)** courses for those graduated from non-health science and related discipline and have not taken a course in principles and practices of Epidemiology, Pathophysiology OR Pharmacology.
 - NURS 604 – Epidemiology: Prerequisite(s): None
 - NURS 607 - Advanced Health Assessment: Prerequisite(s): None
 - NURS 608 - Pharmacotherapeutics: Prerequisite(s): NURS 610
 - NURS 610 - Advanced Pathophysiology: Prerequisite(s): None
- ii. **Health IT and Informatics, Data Science and Analytics Courses for those who have a BSc in Health and related field**
 - DANL 480 - Big Data Analytics
 - PHIS 670/DANL 470 - Health Data Analytics (New Course)
 - INSS 500 – Introduction to Information Systems
 - INSS 505 – Object-oriented Programming
 - INSS 515 – Principles and Practices of Information Systems
 - INSS 540 – Information Systems Analysis and Design
 - INSS 550 – Data Management
 - INSS 575 – Information Systems Project Management
 - INSS 663 - Decision Support Systems



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

TOPIC: Academic Program Proposal:
Bowie State University: Bachelor of Science (B.S.) in Health Services Administration

COMMITTEE: Education Policy and Student Life

DATE OF COMMITTEE MEETING: Tuesday, January 10, 2023

SUMMARY: The proposed program in Health Services Administration contributes to the university's mission by empowering "a diverse population of students to reach their potential by providing innovative academic programs" and by supporting Maryland's workforce and economy. This program contributes to the achievement of Bowie's FY 2019 - FY 2024 Racing to Excellence Strategic Plan, specifically Goal I Academic Excellence, Objective 1.1 High-demand, innovative academic programs. This program is designed to provide a foundation in health services administration and will prepare students for entry level careers in the health care workforce or for continuing graduate studies. It will also serve as a support major for pre-nursing students who may be seeking other career options in the health disciplines. The Health Services Administration program will prepare students for success in various professions in the health care industry, developing the knowledge and skills in leadership, communication, health care systems, economic and socio-economics of healthcare, management theory and community health policy.

Bowie State University is among the top five universities in Maryland known for graduating African-Americans with bachelor's degrees in Nursing, Biology, and Computer/Information Sciences (Diverse Issues in Higher Education). Therefore, the addition of the Health Services Administration program will prepare underrepresented minorities for employment in healthcare facilities such as hospitals, nursing homes, and group medical practices.

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

FISCAL IMPACT: No additional funds required. The program can be supported by projected tuition and fees.

CHANCELLOR'S RECOMMENDATION: That the Education Policy and Student Life Committee recommend that the Board of Regents approve the proposal from Bowie State University to offer the Bachelor of Science (B.S.) in Health Services Administration.

COMMITTEE RECOMMENDATION:

DATE: January 10, 2023

BOARD ACTION:

DATE:

SUBMITTED BY: Joann A. Boughman

301-445-1992

jboughman@usmd.edu



Aminta H. Breaux, Ph.D.

President

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December 1, 2022

Jay A. Perman, MD
Chancellor
University System of Maryland
3300 Metzgerott Road
Adelphi, Maryland 20783-1690

RE: New Academic Program Proposal – Bachelor of Science in Health Services Administration

Dear Chancellor Perman,

Thank you in advance for further consideration of the proposal from Bowie State University to offer the BS in Health Services Administration academic program. It is my understanding that University of Baltimore has withdrawn its earlier objections presented during the Letter of Intent review process. As agreed upon, Bowie State University will continue to work with University of Baltimore on the 4 + 1 or dual enrollment agreement to allow interested and eligible Bowie students enrolled in Health Services Administration to accelerate into UBalt’s MS in Health Administration. We are pleased that a resolution to the objection could be reached with our sister institution, and submit our full proposal to offer a new Bachelor of Science in Health Services Administration (B.S. HSAM) program at Bowie State University (HEGIS 120200/CIP 510701).

Bowie State University (BSU) developed the Health Services Administration program to meet the demand for qualified health managers in the Baltimore-Washington-Virginia region. The curriculum will develop the necessary real-world skills and abilities students need in information literacy and critical thinking, as well as health care management, law and policy. BSU’s proposed program is designed to equip students to thrive as leaders in various industries, including health care delivery, government agencies and non-profit organizations, insurance companies, and other health-related entities.

We respectfully request the Board’s consideration of this proposal.

Sincerely,


Aminta H. Breaux

Cc: Dr. Carl B. Goodman, Provost and Vice President for Academic Affairs
Dr. Joann Boughman, Senior Vice Chancellor, USM
Dr. Darlene Smith, Interim Associate Vice Chancellor, USM
Dr. Cheryl Blackman, Interim Dean, College of Professional Studies
Ms. Shari Christie, Registrar
Ms. Gayle Fink, Office of Planning, Analysis, and Accountability

UNIVERSITY SYSTEM OF MARYLAND INSTITUTION PROPOSAL FOR

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

Bowie State University

Institution Submitting Proposal

Health Services Administration

Title of Proposed Program

Bachelor of Science

Award to be Offered

Spring 2023

Projected Implementation Date

120200

Proposed HEGIS Code

510701

Proposed CIP Code

Nursing

Department in which program will be located

Dr. Cheryl Blackman

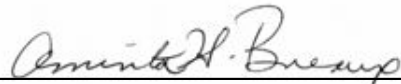
Department Contact

301-860-4705

Contact Phone Number

cblackman@bowiestate.edu

Contact E-Mail Address



Signature of President or Designee

12/1/2022

Date

A. Centrality to Institutional Mission and Planning Priorities:

1. *Provide a description of the program:* The proposed program in Health Services Administration (HSAM) will focus on preparing graduates for employment as medical and health services managers through exposure to content such as health care policy, ethics and the laws governing our healthcare systems. Management systems and marketing strategies are included in the curriculum which is designed to provide professional development for graduates from the program. Students will also be required to complete a year-long internship at various healthcare facilities which will serve as a capstone experience leading to greater employment opportunities.

The proposed program in Health Services Administration was developed to meet the needs of students seeking varied career paths. It is designed to prepare students for entry level positions in a field that is rapidly expanding. According to the Occupational Health Outlook (2020), the outlook for this career option is good with a growth rate of 32% which is much faster than average for similar programs in the health field. Given the technological transition in healthcare from paper to electronic data collection and storage, this career option is leading the way in the 21st century to provide the academic foundation needed to produce competent health care information managers. The program will offer a second career option for pre-nursing students who may not have been successful in being admitted to a regular nursing program and is considered a very viable and attractive option for these students who want to remain in the health field. In addition, the program will serve as a gateway to graduate school for those business majors who may want to pursue a specialized master's degree program in Health Sciences or Health Informatics.

2. *Program support the institution's mission and strategic goals:* Bowie State University (BSU) is a comprehensive university that provides 21st century learners with a strong foundation for success with a well-rounded academic experience, an inclusive environment, and hands-on learning opportunities. Building on its rich legacy as a training ground for teachers since 1865, the university is committed to providing access to a high-quality education and cultivating emerging leaders who are prepared to succeed in a changing,

4

global society.

The proposed program supports our mission to empower a diverse population of students to reach their potential by providing innovative academic programs and transformational experiences as they prepare for careers, lifelong learning, and civic responsibility. The Health Services Administration contributes to this mission by providing a career pathway for students who entered the institution in a pre-health field and opted to transfer to a less clinical program within the health profession. Additionally, the program is aimed at providing a diverse curriculum for students enrolled in other programs such as business and social work, who seek preparation in the growing career health services management field, thereby supporting student success with an additional path to completion. This program contributes to the achievement of Bowie's FY 2019 - FY 2024 Racing to Excellence Strategic Plan, specifically Goal 1 Academic Excellence, Objective

1.1 High-demand, innovative academic programs. The Department of Nursing, in the College of Professional Studies, will provide initial oversight and support for the proposed program until the formation of a new Department of Health Sciences, which will house the program permanently. This new department will add to the existing departments in the college which include Behavioral Sciences and Human Services, Nursing, Psychology, and Social Work, which all provide opportunities to traditionally underrepresented populations in these disciplines. The university is among the top five universities in Maryland known for graduating African-Americans with bachelor's degrees in Nursing, Biology and Computer/Information Sciences (Diverse Issues in Higher Education). Therefore, the addition of the Health Services Administration program will prepare underrepresented minorities for health services management employment opportunities in healthcare facilities such as hospitals, nursing homes, and group medical practices.

3. *Funding for Proposed Program:* It is anticipated that the larger portion of enrollments will derive from transfers from within other BSU programs, primarily pre-nursing majors (although students may transfer from other programs as well or enroll directly in the program). The program will be funded by a combination of existing funds from the Department of Nursing and new funds. As a part of BSU's

multi-year budget process, funds have been allocated in the FY 24 budget to hire new faculty and create a new department in support of this program. Initial funding will be provided through allocation of a portion of BSU's coalition fund allotment; the program will be sustained through a combination of tuition revenue and coalition funds. As enrollment increases, the program will be self-funded through tuition only after coalition funding is no longer available. (See Section L)

4. *Institution's commitment to the program:* Both the university president and provost have pledged their support of this program with the use of coalition funds targeted for new programs. The proposed program initially will be housed in the Nursing Department, with a new Department of Health Sciences being developed for this and other health-related programs in the coming semesters. In the interim, the Department of Nursing has adequate administrative and technical support to bolster the implementation of this program. As a part of BSU's multi-year budget process, funds have been allocated in the FY 24 budget to hire new faculty and create a new department in support of this program. Initial funding will be provided through BSU's coalition fund allotment and the program will be sustained through this funding source. Tuition revenues, because of increased enrollment, will support this program after coalition funding is no longer available. (See Section L).

Both the university president and provost have pledged their support of this program with the use of coalition funds targeted for new programs. It will be initially housed in the Nursing Department as a new Department of Health Sciences is developed for this and other health related programs. The Department of Nursing has adequate administrative resources to govern the program in its infancy. As the program grows, it is expected that it will be self-sufficient based on enrollment projections.

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
 - b) Societal needs, including expanding educational opportunities and choices for minority and educationally disadvantaged students at institutions of higher education
 - c) The need to strengthen and expand the capacity of historically black institutions to provide high quality and unique educational programs

The Health Services Administration program supports the societal need to have a qualified workforce prepared to manage health service delivery in the region. As reported by *HealthManagement.org*, the population is aging at an alarming rate. It is critical that healthcare institutions be equipped to manage the care of the entire individual as these people enter

health care facilities, while understanding concepts in management, human resources, information technology and communication skills.

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

The 2017-2021, and the current 2022 Maryland State Plan for Higher Education hold as primary goals student access, student success, and innovation. The new Plan continues its focus on equal educational opportunities for Marylanders and calls for continued support for Historically Black Colleges and Universities. The proposed program is well aligned with the following goals, strategies and action items of the Maryland State Plan for Postsecondary Education: SUCCESS: Promote and implement practices and policies that will ensure student success - Strategy 4, 5, and 6.

Whites make up the majority of the U.S. workforce (64.4%), Hispanics (16.1 %) Blacks or African American {11.6%} Asians (5.3%). (HRSA.gov 2017} Only 4% of all healthcare professionals are black with the majority of employees in Health Care Administration being white. Blacks or African Americans are severely underrepresented in the workforce as reflected in the data below.

Race/Ethnicity	Percent within Healthcare Administration Occupation in Greater Maryland Region Employed
White	51%
Black or African American	34%

Increasing the diversity in the healthcare workforce serves as an effective strategy for addressing racial and ethnic healthcare disparities. Increasing diversity will also lead to improving the ability of the healthcare workforce to effectively address the health care needs of all Americans. A review by the U.S. Bureau of Health professionals identified several advantages to recruiting health professionals from underrepresented minority groups. These include the fact that these professionals disproportionately 8

serve minority populations and that minority patients tend to receive better care from providers who are like them.

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.
2. Present data and analysis projecting market demand and the availability of openings in a job market to be served by the new program.
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.
4. Provide data showing the current and projected supply of prospective graduates.

According to the U.S. Bureau of Labor Statistics, healthcare careers were projected to grow by 23% from 2012-2022 and current statistics predict a 53.94% increase in the overall demand for healthcare administrators over the next decade. The bureau lists Maryland as the state with the highest concentration of healthcare jobs in the United States. Within the state of Maryland and the surrounding DMV area, there were approximately 5,660 job postings requiring a Bachelor's degree for employment from January 2020 to December 2020. Long-term projections from the Maryland Department of Labor show approximately 13,235 anticipated job openings which is a 22.15% increase between 2018-2028

(<https://www.dllr.state.md.us/lmi/iandoproj/maryland.shtml>).

Health organizations, both private and public, dominated the job postings. These ranged from health insurance organizations, pharmacies, colleges, hospitals, and other private health organizations. The Maryland Department of Labor's 2020-2030 labor projections indicated an annual need of nearly 1,500 health service managers annually through 2030¹.

¹ Maryland Department of Labor, Occupational Projections 2020 – 2030. Retrieved from [Maryland Occupational Projections - Office of Workforce Information and Performance \(OWIP\) \(state.md.us\)](https://www.dllr.state.md.us/lmi/iandoproj/maryland.shtml).

Most jobs are found within the general medical and surgical hospital sector (24%), and this is followed by the federal government and civilian (19%). Within the full employment region of Maryland, Virginia, and Washington, D.C., the racial/ethnic group with the largest percentage of employees is White (51%). Blacks or African Americans are severely underrepresented in the workforce (34%), and this provides an opportunity for the university to promote and implement this program to help bridge the gap for this group of students.

Current statistics report that in 2019, there were 338 graduates obtaining the bachelor's degree with the majority of them (229) being awarded from one on-line program at the University of Maryland Global Campus. Overall, 49% of the total market was attributable to bachelor's degrees. It is noted that students will have the opportunity to advance their education in health services administration through completion of a post baccalaureate certificate, a master's degree and a post master's certificate.

D. Reasonableness of Program Duplication:

There are a number of universities in the University System of Maryland that offer a similar program. They are the University of Maryland Global Campus, Towson University, and the University of Baltimore. Washington Adventist University is the other university within the region with a similar program. The curriculum for the undergraduate health services administration program is similar across the institutions. The University of Maryland Global Campus offers an on-line Bachelor of Science in Health Services Management program which is designed for entry-level and mid-career professionals in the health care industry. Towson University offers a major in Health Care Management, and the University of Baltimore offers a BS in Health Management. Washington Adventist University offers a Bachelor of Science in Health Care Administration. However, the proposed program for Bowie State University is designed primarily to support two high-demand existing programs at the institution: Nursing and Business. It may also serve students transferring from community colleges or other institutions. Specifically, this program will provide a viable option for those students who, for a number of reasons, are not accepted into the traditional Nursing program after

completion of two years of coursework. Many of these students still desire a career in the healthcare field and the HSAM program is designed to allow for a relatively smooth transition from the pre-nursing program. In addition, many business majors view this as an opportunity to use the credits earned in their major over the course of two years to enter the healthcare workforce. Also, this program will serve to increase the number of African American graduates needed to meet the demand and to diversify the workforce in this area.

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

Bowie State University is one of four HBIs in the state of Maryland. According to data, the University of Maryland Global Campus and Towson University awarded 97% of the baccalaureate degrees in Health Care Management over the past few years. Therefore, this program would not adversely impact current high-demand programs at HBIs in the state.

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

Bowie State University is the oldest Historically Black Institution in Maryland and continues to serve an under-represented minority population of students. The university promotes a holistic and coordinated approach to student success and seeks to enhance the campus culture of diversity, inclusion and civic engagement. The goals of this new program are to meet the demand for new educational options for students while increasing the number of African American/Black healthcare professionals across the region.

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

This program is designed to provide a foundation in health services administration and will prepare students for entry level careers in the health care workforce or for continuing to graduate studies. It will also serve as a support major for pre-nursing students who may be seeking other career options in the health disciplines.

Program Goals and Objectives:

- Provide students with broad knowledge and experience about work in health care management settings.
- Develop students' ability to understand the role and responsibility of the health service administrator professional.
- Promote critical thinking and skills to meet professional career demands.
- Prepare students to apply knowledge and skills in workplaces such as health care delivery systems, pharmaceutical companies, skilled nursing facilities and health services research organizations.

Student Learning Outcomes:

Students majoring in Health Services Administration will be able to:

1. Explain the major components of the United States health care systems.
2. Apply the analytical and critical thinking skills needed to be effective and efficient in a variety of health care settings.
3. Apply ethical and legal principles relevant to health care systems and the laws that govern these systems.
4. Demonstrate appropriate professional behaviors, effective communication and leadership skills in interactions with clients and others in the health care system.
5. Explain how economic and socio-cultural factors affect health care.
6. Utilize strategies to influence health care policy and to improve community health among various cultural groups.
7. Apply basic management theories and principles in health care settings.
8. Utilize various technologies to access and manage information in a variety of health care settings.
9. Utilize evidence-based research data to facilitate decision making about policies and practices.

Core Competencies:

The following are the core competencies of the proposed program.

1. Communication skills
2. Professional behavior
3. Analytical and critical thinking
4. Evidence-based decision making
5. Administrative and management skills
6. Cultural sensitivity
7. Legal and ethical proficiency

Assessment of Program:

An annual program assessment report is required for all university programs. Achievement of learning outcomes in each course will be evaluated through standardized mid-term and final examinations. An overall assessment of student learning outcomes and program goals will be assessed according to the program assessment plan. Additional assessment data will be collected from student performances in the capstone courses (HSAM 480 and HSAM 490). Findings from the annual program review will be discussed with departmental faculty and will serve to develop improvements in the program according to the findings. These findings in the assessment reports are archived by the university annually.

Credits Distribution in Program:

This degree program will include 46 credits of General Education Requirements for the first two years. Existing General Education courses will be used, and these requirements are consistent with COMAR. Thirty-nine credits of core courses and 34 credits of supporting and elective courses complete the program requirements for a total of 120 credits. Students in the BS Health Services Administration program will complete a year-long 7-credit internship supervised by health care professionals during their senior year.

Following is a list of courses which fulfill the requirements of this major and General Education Requirements. Core and supporting course descriptions are included in Appendix A.

Core Courses:

Course No.	Course Title	Credit Hours
HSAM 200	U.S. Health Systems	3
HSAM 202	Health Care Management I	3
HSAM 204	Health Care Policy	3
HSAM 300	Quality Assessment for Health Care	3
HSAM 302	Health Care Management II	3
HSAM 304	Population/Community Health	3
HSAM 306	Health Care Law	3
HSAM 308	Ethics in Health Care	3
HSAM 310	Professional Development	3

HSAM 400	Governance and Leadership	3
HSAM 402	Long-term Care Administration	3
HSAM 480	Health Services Administration Internship I	4
HSAM 490	Health Services Administration Internship II	4
Total Credits		41

Supporting and Elective Courses (Students elect a minimum of 33 credits from the courses listed below):

Course No.	Course Title	Credit Hours
ACCT 211	Principles of Accounting	3
ECON 211	Introduction to Macroeconomics	3
MGMT440	Business Strategy and Policy	3
MGMT 344	Organizational Behavior	3
BUIS 360	Information Systems Management	3
NURS 400	Introduction to Nursing Research	3
NURS 320	Cultural Diversity and Special Populations in Health Care	3
FINA 320	Principles of Finance	3
MKTG 231	Principles of Marketing	3
MATH 155	Introduction to Probability and Statistics	3
PSYC 204	Statistics I	3
IDIS 240	Medical Terminology	3
ECON 212	Introduction to Microeconomics	3

General Education Requirements:

Course No.	Course Title	Credit Hours
Institutional requirements		
FRSE 101	Freshmen Seminar	3
Health elective		3
English Composition		
ENGL 101	Expository Writing	3
ENGL 102	Argument and Research	3
Arts and Humanities	Courses from two different disciplines	6

Social Sciences		
HIST 114 or HIST 115	African American History to 1865 or African American History since 1865	3
Social Science Elective	Course from different discipline	3
Sciences		
BIOL 102	Introduction to Biology	4
Science Elective		3/4*
Mathematics		
MATH 125 or MATH 141	College Algebra or Pre-Calculus	3
Technology		
COSC 110	Computer Literacy and Applications	3
General Education Electives	Selected from any discipline, 100 or 200 level course	9
Total Credits		46/47

* Pre-nursing students are required to complete a four-credit science course as a general education requirement

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.

Bowie State University's internal process, grounded by the "shared governance principle", for academic program review and approval, has been practiced consistently. This process will be used for the proposed program where department curriculum committees, college curriculum committees, the university curriculum committee, and the faculty senate will review and approve the program proposal.

The Provost reviews and approves the program with final approval given by the President. Once the program is approved through the USM and MHEC, information on the curriculum, courses, degree requirements, admission requirements, and other relevant information will be added to the university catalog and made available to the university community and the public through the university's website. Information regarding technical equipment requirements, the learning management system,

the availability of academic support services, financial aid resources, and costs and payment policies are already available on the BSU web site.

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 Bowie State University's Relations and Marketing (URM) department has the authority to review and approve content about programs and related information before it is posted and shared on the website, social media, pamphlets, flyers, and other media sources. As such, the Dean of the College of Professional Studies and Chairs of the Department of Nursing and Business will provide their assurance that advertising, recruiting, and admission materials will clearly and accurately represent the proposed program and the services available. Departments do not represent their programs in any manner other than what is approved by the BSU President and MHEC. If approved, this program will be presented to current and potential students in accordance with program goals, courses, facilities, and services set out by this proposal and BSU administration directives pertaining to all programs. Information regarding this new program will be disseminated through advertising, recruiting and admissions materials utilizing various media sources.

Certification of the Program

The program is designed to meet the criteria for certification as set forth by The Association of University Programs in Health Administration (AUPHA). This is a global network of colleges, universities, faculty, individuals and organizations dedicated to the improvement of health and healthcare delivery through excellence in healthcare management and policy education.

H. Adequacy of Articulation

Currently, there are no formal articulation agreements for BSU's HSAM program; however, Bowie State University has articulation agreements with several community colleges in Maryland which creates a seamless transfer structure for students to enter the university. The fusion of academics and enrollment services for transfer students was recently implemented, since many transfer students expressed concern of not knowing the resources on the campus. In addition, the transfer student population needed support to increase efforts for retention. As a result, Bowie State University has increased the hands-on contact and communication with our partner Community Colleges and interested students. The university has opened lines of engagement to update and fine-tune our entire process and documents. Also, the university has participated in many webinars that inform aspiring students from the Community Colleges about our academic programs here at Bowie State University. Included on the university's website are academic Transfer Guides, MOUs, Agreements and support documentation that inform students of the academic requirements needed prior to their transfer to Bowie State University. Following are some of the Community Colleges that have partnered with Bowie State so far:

**Anne Arundel Community
College Baltimore City
Community College
The Community College of Baltimore
County Montgomery College
Prince George's Community College
Wor-Wic Community College
College of Southern Maryland**

In addition, Bowie has begun discussion with University of Baltimore to enter into articulation for graduates of this program to enter UB's graduate health services management program. Once the agreement is formalized, the receiving institution University of Baltimore will submit the required documentation to MHEC.

I. Adequacy of Faculty Resources (as outlined in COMAR 13B.02.03.II)

Initially, this program will need to hire three full-time faculty (one program coordinator, two faculty) who will work with part-time faculty to ensure that the program is delivered appropriately. The faculty that will support this program initially will be those associated with the Nursing program in the College of Professional Studies. The current faculty members are listed below. Other adjunct faculty will be rotated as needed.

Name	Appointment type & Rank	Terminal Degree	Status	Courses
Dr. Jacqueline Hill	Tenured/Professor & Chair	Ph.D., RN, CNE	Full-time	HSAM 310, 400
Dr. Birthale Archie	Tenure-track/Assistant Professor	DNP, Nursing	Full-time	HSAM 480, 490
Dr. Denise Jarboe	Tenure-track/Assistant Professor	DNP, Nursing	Full-time	HSAM 202, 302, 402
Ms. Tabitha Rigsby-Robinson	Instructor	MSN, Nursing	Full-time	HSAM 200, 204, 306

Demonstrate how the university 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*
- c) Evidenced-based best practices for distance education, if distance education is offered.*

- a. In addition to attending regional, national and international professional conferences focusing on pedagogy, faculty are also required to attend a Faculty Institute at the beginning of each Fall and Spring semester sponsored by the Center for Excellence in Teaching and Learning. There, faculty are introduced to the most current pedagogies and best practices in higher education along with topics relevant to the academic success of students.

- b. Bowie State University's learning management system is Blackboard which will be utilized for the delivery of this proposed program. Blackboard has been utilized for many years at the university and is effective in the administration, tracking, reporting and delivery of educational courses. It is supported by the Division of Information Technology which offers professional development and Blackboard Basics workshops for both online and in-person courses throughout the year. Several faculty members have been trained or are currently undergoing training in Quality Matters review of online and hybrid courses.
- c. At this time, the program will be offered only on campus. Should the University determine to add an online option, the request will be submitted to MHEC.

J. Adequacy of Library Resources

The Thurgood Marshall Library at Bowie State University has access to a variety of materials that may be used for health care education and research. **ABI Inform Global, Academic Search Ultimate, MEDLINE (EBSCO) and ScienceDirect** are a few excellent multidisciplinary databases for the discipline as well as **APA PsycARTICLES** and **APA Psycinfo** Databases. The library has subscriptions to several journals in the healthcare field which provide students and researchers access to current research and advances in the field. These include:

The Academy of Health Care Management Journal - available in both print and electronic form

Frontiers of Health Services

Management Health Affairs

Health Economics

Health Policy and Planning

Health Services Research

Health Technology

Assessment Healthcare

Executive

Health Care Management

Review Health Facilities

Management

International Journal of Healthcare

Management Internet Journal of Healthcare

Administration Journal of Health Politics

Policy and Law

Journal of Healthcare Management Managed Healthcare Executive

Materials Management in Health Care

The university has access to the USMAI Catalog which allows access to books and media from all the University System of Maryland libraries through interlibrary loans. Overall, the library has a variety of resources that may be used to support students in this proposed program.

K. Adequacy of Physical Facilities, Infrastructure and Instructional Equipment

Bowie State University opened the \$100 million dollar Center for Natural Sciences, Mathematics and Nursing in 2017. This facility includes state-of-the-art classrooms and laboratories for students in this proposed program. All classrooms and laboratories are equipped with Smart technology including computers and audio-visual equipment to maximize instruction and teacher interaction with students. Students in this program will also have access to all available resources at BSU and the university does not anticipate the need for additional space for this program.

L. Adequacy of Financial Resources with Documentation

Bowie State University recognizes the need for the proposed program which will enhance and increase the program offerings in the college. The university is committed to utilizing institutional resources especially those slated for academic innovation. Annually, there are approximately 150 pre-nursing students who are not accepted into the traditional nursing program. It is estimated that approximately 15% of this group of students would opt for pursuing the program in Health Services Administration. It is anticipated that 15 new students will be admitted each year for the first five years of the program, resulting in 60 students

for the first four years.

Resources and Expenditures

Table I projects enrollment for full-time equivalent students and the number of full-time equivalent faculty for the first five years. It is estimated that 15-20 new students will be admitted during the first year, increasing to approximately 60-75 full- and part-time students during years 4 and 5. Graduates from the program are expected by the fourth year.

Table 2 projects expenditures for the new program to include three new full-time faculty, one administrative assistant and two adjunct faculty. Other support staff are already in place in the college. The university has pledged the use of Coalition funds in support of this new program.

TABLE 1: RESOURCES					
Resources Categories	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
1. Reallocated Funds ¹	0	0	0	0	0
2. Tuition/Fee Revenue ² (c+g below)	136,170	272,530	430,355	577,980	759,090
a. #F.T Students	15	30	45	60	75
b. Annual Tuition/Fee Rate ⁴	8734	8909	9087	9269	9454
c. Annual Full Time Revenue (ax b)	131,010	267,270	408,915	556,140	709,050
d. # Part Time Students	1	1	2	2	3
e. Credit Hour Rate ⁵	258	263	268	273	278
f. Annual Credit Hours	20	20	40	40	60
g. Total Part Time Revenue (d x ex f)	5,160	5,260	21,440	21,840	50,040
3. Grants, Contracts, & Other External Sources ³	0	0	0	0	0
4. Other Sources	0	0	0	0	0
TOTAL (Add 1- 4)	136,170	272,530	430,355	577,980	759,090

¹ Whenever reallocated funds are included among the resources available to new programs, the following information must be provided in a footnote: origin(s) of reallocated funds, impact of the reallocation on the existing academic program(s), and manner in which the reallocation is consistent with the institution's strategic plan.

² This figure should be a realistic percentage of tuition and fees which will be used to support the new program. Factors such as indirect costs linked to new students and the impact of enrolling continuing students in the new program should be considered when determining the percentage.

³ Whenever external funds are included among the resources, the following information must be provided in a footnote: source of the funding and alternative methods of funding the program after the cessation of external funding.

⁴ Tuition Rate is based on the FY 2022 Tuition and Rate schedule with a 2% increase in subsequent years.

⁵ Credit Hour rate is based on the FY 2022 Tuition Rate schedule with a 2% increase in subsequent years.

⁶ Reallocated funds are calculated based on the number of students projected to transfer into the program from the pre-nursing program, based on 30 credits earned under that program.

As a part of BSU's multi-year budget process, funds have been allocated in the FY 24 budget to hire new faculty and create a new department in support of this program. Initial funding will be provided through BSU's coalition fund allotment and the program will be sustained through this funding source. Tuition revenues, because of increased enrollment, will support this program after coalition funding is no longer available. Both the university president and provost have pledged their support of this program with the use of coalition funds targeted for new programs. It will be initially housed in the Nursing Department as a new Department of Health Sciences is developed for this and other health related programs. The Department of Nursing has adequate administrative and technical support to bolster the implementation of this program.

TABLE 2: EXPENDITURES					
Expenditure Categories	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
1. Total Faculty Expenses (b + c below)	301,500	301,500	307,530	313,681	319,956
a.# FTE	3	3	3	3	3
b. Total Salary ¹	225,000	225,000	229,500	234,090	238,773
c. Total Benefits ²	76,500	76,500	78,030	79,591	81,183
2. Total Administrative Staff Expenses (b + c below)	67,000	67,000	68,340	69,707	71,100
a.# FTE	1	1	1	1	1
b. Total Salary ³	50,000	50,000	51,000	52,020	53,060
c. Total Benefits ⁴	17,000	17,000	17,340	17,687	18,040
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 ⁵	8,500	2,500	2,500	8,500	2,500
5. Library	0	0	0	0	0
6. New or Renovated Space ⁶	7,000	7,000	7,000	7,000	7,000
7. Other Expenses ⁷	19,620	19,620	19,620	19,620	19,620
TOTAL (Add 1 - 7)	403,620	397,620	404,990	418,508	420,176

24

¹Average salary for Assistant Professors for FY 2024 with a 2% increase in year 3 and subsequent years.

²Average benefits for Assistant Professors for FY 2024 is 34% of salary.

³Current salary for Administrative Assistant II in FY 2024 with a 2% increase in year 3 and subsequent years.

⁴Average benefits for Administrative Assistant II for FY 2024 is 34% of salary.

⁵Equipment - cost for 3 computers on a 3-year replacement cycle and other equipment as needed for yearly program enhancements.

⁶ New or Renovated Space - cost for expansion of office space and lab space for new program.

⁷ Other Expenses - cost of salary and fringe for two (2) adjunct faculty members.

M. Adequacy of Provisions for Evaluation of Program

The university has a rigorous course and program assessment process. Course-level assessment of student learning outcomes will be evaluated through exams, quizzes and papers. This data will be collected and analyzed to improve courses and to ensure that program learning outcomes are met. Program student learning outcomes data are evaluated annually according to the program's assessment plan. An annual assessment report is required for all programs at the university. The findings from this annual report are discussed with department faculty so that program improvements may be developed and implemented as needed.

Both tenured and non-tenured faculty are evaluated by students, peers and administrators. Faculty members are evaluated on their teaching performance by students each semester. Faculty are evaluated by their peers annually. The department chair also evaluates faculty teaching performance annually. This assessment process provides an opportunity for administrators to review plans for faculty improvement in teaching, and in professional development.

Evaluation of proposed program's educational effectiveness

The proposed program's courses and faculty will be evaluated using BSU's end of course evaluation survey each semester. This end-of-semester evaluation survey will provide data on students' satisfaction with the HSAM program courses and faculty. This data will be aggregated for the program to assess its effectiveness.

For *student retention*, student enrollment numbers for the program will be monitored and the retention rate determined and reviewed each semester. For *cost effectiveness*, student enrollment numbers in various HSAM classes will be monitored and revenue/cost calculated. *Assessment of student learning outcomes* will be measured through implementation of the student learning outcomes assessment plan.

N. Consistency with the State's Minority Student Achievement Goals

As Maryland's first Historically Black Institution, Bowie State University is committed to providing access to high quality higher education to African-Americans and other under-represented minorities. The goals established in the University's Racing to Excellence FY 2019 - FY 2024 Strategic Plan support student achievement and long-term viability of the institution and align with the goals in the *2017-2021 State Plan for Postsecondary Education: Student Success with Less Debt*. Specifically, Bowie continues to support educational opportunity for Marylanders (Success, Strategy 4), engage in a continuous improvement process to ensure that institutional policies and practices support student success (Success, Strategy 5), provide alternative modalities, new programs and pedagogies and streamlined student and academic support services to facilitate timely degree completion (Success, Strategy 6) (Innovation, Strategy 9), integrate high impact practices into the student experience, including career advising and planning into internship experiences (Success, Strategy 7), partner with business, government and other institutions to support workforce development and graduate readiness (Innovation, Strategy 8), and expand support for grant participation and research (Innovation, Strategy 10). Bowie State faculty, staff, students and administrators are engaging in change management strategies and embracing experimentation so that the university can better meet the holistic needs of our students (Innovation, Strategy 11).

Bowie State University has a long-standing commitment to diversity as the institution values and celebrates diversity in all its forms. The University

community believes that its educational environment is enriched by the diversity²²

of individuals, groups and cultures that come together in a spirit of learning. The university fully embraces the global definition of diversity that acknowledges and recognizes differences and advances knowledge about race, gender, ethnicity, national origin, political persuasion, culture, sexual orientation, religion, age, and disability. The University creates positive interactions and cultural awareness among students, faculty and staff through infusing global diversity awareness in the curriculum, expanding co-curricular programming that promotes diversity awareness and maintaining a campus climate that respects and values diversity.

0. Relationship to Low Productivity Programs Identified by the Commission

This program is in the College of Professional Studies and will be in the new Department of Health Sciences. It has no relationship with a low productivity program identified by the Commission.

P. Adequacy of Distance Education Programs

At this time, the program will be offered in a traditional, face-to-face format.

Appendix A
Descriptions of Core Courses

Course Number and Title	Course Description	Number of Credits
HSAM 200 - U.S. Health Systems	This course introduces the theoretical basis for the system, its history and development, and its overall planning, organization, management, evaluation, quality, professions, and major health policy issues.	3
HSAM 202 - Health Care Management I	This course addresses the application of managerial concepts and practices to healthcare organizations. It compares governance, strategy, structure, firm conduct, and performance across different types of health organizations. It examines the skills of healthcare managers, such as leadership and communication, and as change managers and strategic planners.	3
HSAM 204 - Health Care Policy	This course examines procedures about how healthcare policy is developed at the federal and state levels. It explores the influence of all constituencies in policy formation and the role of politics in healthcare. It compares existing policy and policy formation in other countries to what is accomplished in the US.	3
HSAM 300 - Quality Assessment for Health Care	This course examines various assessment tools including their reliability and accuracy. It explores how healthcare delivery systems can improve the measurement of outcomes from both the patient and organizational perspective. It analyzes quality improvement programs and examines their adaptability to the healthcare environment.	3

Course Number and Title	Course Description	Number of Credits
HSAM 302 - Health Care Management II	This course explores the manager's role in creating and maintaining a productive health care workforce by understanding management theory and practice. It includes human resource planning, job analysis, recruitment, selection, development, work re-design, performance evaluation, and compensation and employee relations. Ethics, workforce diversity and changing demographics may also be covered.	3
HSAM 304- Population/Community Health	This course introduces students to the field of public health and epidemiology, emphasizing the socio-cultural factors associated with the distribution and etiology of health and disease.	3
HSAM 306 - Health Care Law	This course gives an overview of general law and health care issues. It explores aspects of employer-employee relations in the health care setting and the legal ramifications of patient treatment and medical records.	3
HSAM 308 - Ethics in Health Care	This course explores and analyzes contemporary health care situations in terms of ethics. Topics may include patient-caregiver relationships, medical experimentation, confidentiality of medical records and death and dying.	3
HSAM 310- Professional Development	This course is designed to help students develop a firm foundation of business, career assessment, resume writing, entrepreneurship and interviewing techniques necessary to succeed and emerge as leaders in corporate America healthcare systems. It combines lecture, interactive discussions, simulations and periodic guest lecturers as part of the total learning experience.	3

Course Number and Title	Course Description	Number of Credits
HSAM 400- Governance and Leadership	This course explores ways to guide, direct and assume principal responsibility in the workplace. Governance explores the principles of the governance structure of healthcare organizations	3
	and how they can be effectively managed. Included in the course are considerations of governmental, accreditation, and professional associations' oversight.	
HSAM 402 - Long-term Care Administration	This course examines services provided after hospitalization by skilled nursing facilities, inpatient rehabilitation facilities, nursing homes, home health care, and long-term care hospitals. Post-acute care is examined to show the effect of smooth transitions, and to create an understanding of how this care fits into the continuum of care in managing risk in the healthcare reform environment.	3
HSAM 480 - Health Services Administration Internship I	This course provides knowledge-based scenarios, educational and clinical exercises to explore how the core competencies of communication skills, professional behavior, analytical and critical thinking, evidence-based decision making, administrative and management skills, cultural sensitivity and legal and ethical proficiency are practiced in the clinical environment. A minimum of 120 hours is required in a clinical setting.	3
HSAM 490 - Health Services Administration Internship II	This course provides a hands-on educational and clinical experience within healthcare settings such as hospitals, clinics, long-term care facilities, and doctor's offices. A minimum of 120 hours is required in a clinical setting.	3

BACHELOR OF SCIENCE - HEALTH SERVICES ADMINISTRATION
SAMPLE PROGRAM

FRESHMAN YEAR			
FALL	CREDITS	SPRING	CREDITS
FRSE 101 - Freshman Seminar	3	SOCI 101 - Introduction to Sociology	3
ENG 101 – Expository Writing	3	COSC 110 – Computer Literacy & applications	3
BIOL 102 – Introduction to Biology	4	ENG 102 – Argument and Research	3
MATH 125 or MATH 141 – College Algebra/Pre-Calculus	3	PHIL 103 – Principles of Reasoning or Arts & Humanities Elective	3
PSYC 101 - General Psychology	3	HIST 114 or 115 – African-American History	3
	16		15
SOPHOMORE YEAR			
FALL	CREDITS	SPRING	CREDITS
COMM 101 or 103 - Oral Communication	3	HSAM 200 – U.S. Health Systems *	3
ENGL 210 – Introduction to English Grammar	3	IDIS 215 - Nutrition in Health & Disease or Health Elective	3
ECON 211- Introduction to Macroeconomics	3	ECON 212 – Introduction to Microeconomics	3
MATH 155 or PSYC 204 - Statistics	3	SCIENCE Elective	4
IDIS 240 – Medical Terminology	3	ACCT 211 – Principles of Accounting	3
	15		16
JUNIOR YEAR			
FALL	CREDITS	SPRING	CREDITS
HSAM 202 – Health Care Management I	3	MGMT 440 – Business Strategy and Policy	3
HSAM 204 – Health Care Policy	3	HSAM 304 – Population/Community Health (Pre-Requisite HSAM 300)	3
BUIS 360 – Information System Management	3	HSAM 302 Health Care Management II (Pre-Requisite HSAM 202)	3
HSAM 300 – Quality Assessment for Health Care	3	MGMT 344 – Organizational Development	3
MKTG 231 – Principles of Marketing	3	HSAM 306 – Health Care Law	3
	15		15

SENIOR YEAR			
FALL	CREDITS	SPRING	CREDITS
HSAM 480 – Internship I	3	HSAM 400 – Governance & Leadership	3
HSAM 308 – Ethics in Health Care	3	HSAM 402 – Long Term Care Administration <i>(Pre-Requisite HSAM 306)</i>	3
HSAM 310 – Professional Development	3	FINA 320 – Principles of Finance	3
HSAM Elective (Research)	3	HSAM 490 – Internship II <i>(Pre-Requisite HSAM 480)</i>	4
HSAM Elective	3		
	15		13

***NOTE: HSAM 200 is a pre-requisite for all HSAM courses.**

Health Services Administration Course List

The BS in Health Services Administration program will include 46 credits of General Education Requirements for the first two years. Existing General Education courses will be used, and these requirements are consistent with COMAR. 74 credits of core courses and electives complete the program requirements for a total of 120 credits. A sample four-year plan of study for the program is presented in Appendix A. The table below provides a list of courses with title, semester credit hours and course descriptions. The program requirements are:

Admission requirements: (BSU UG catalog)

Graduation requirements: A minimum grade of C in all core courses, ENGL 101 & 102.

Table 3: List of All Courses			
Course No.	Course Title	Semester Credit Hours	Course Description
General Education Courses: 46 Credit Hours			
FRSE 101	Freshman Seminar	3	The course explores BSU's history through engaging experiential and cultural activities, developing critical thinking skills for firm foundations that lead to higher education success.
ENGL 101	Expository Writing	3	This course teaches the rhetorical, analytical, and comprehension skills necessary for academic success.
ENGL 102	Argument and Research	3	The course builds on the skills developed in Expository Writing (ENGL 101), focusing on analysis, synthesis and evaluation, logical thinking, the techniques of argument, writing about literature, and preparation of the documented essay.
ENGL 210	Introduction to English Grammar	3	This course is an introduction to the study of standard English grammar and its usage.
Health Elective	Any course from HEED or IDIS	3	
BIOL 102	Introduction to Biology	4	The course is designed to introduce the concepts of cellular and molecular biology, basic chemistry, the chemistry of life, and genetics.
MATH 125	College Algebra	3	The course explores applications of polynomial, rational, algebraic, exponential, and logarithmic functions.
SOCI 101	Introduction to Sociology	3	The course is a survey of basic concepts and formulations in sociology, such as functional, conflict, and interaction perspectives, as they are applied to the study of structure and process in society, from the group to the institutional level.
PSYC 101	General Psychology	3	The course is an introduction to basic research and theories in the field of psychology, including principles of learning, memory, brain and behavior relationships, developmental and social psychology, psychological measurement, and an overview of personality and psychological disorders and treatment.

COSC 110	Computer Literacy & Applications	3	This course is an introduction to fundamental concepts and applications of computing, designed for students with no prior training in computer use.
HIST 114 or HIST 115	African-American History	3	The course explores Black American life from its African background to the end of the Civil War. This course is an analysis of the role of Black American life from the Civil War to the present.
COMM 101	Oral Communication	3	The course is designed to provide theory and practice in the basic oral skills necessary for effective communication.
Arts & Humanities Electives	Any course from ENGL, SPAN, ART, COMM, MUSC, PHIL, THEA, FRENCH	6	
Science Elective	Any course from BIOL, CHEM, PHSC, PHYS	3	
Health Services Administration Core Courses: 13 courses, 41 credit hours			
HSAM 200	U.S. Health Systems	3	This course introduces the theoretical basis for the system, its history and development, and its overall planning, organization, management, evaluation, quality, professions, and major health policy issues.
HSAM 202	Health Care Management I	3	This course addresses the application of managerial concepts and practices to healthcare organizations. It compares governance, strategy, structure, firm conduct, and performance across different types of health organizations. It examines the skills of healthcare managers, such as leadership and communication, and as change managers and strategic planners.
HSAM 204	Health Care Policy	3	This course examines procedures about how healthcare policy is developed at the federal and state levels. It explores the influence of all constituencies in policy formation and the role of politics in healthcare. It compares existing policy and policy formation in other countries to what is accomplished in the US.
HSAM 300	Quality Assessment for Health Care	3	This course examines various assessment tools including their reliability and accuracy. It explores how healthcare delivery systems can improve the measurement of outcomes from both the patient and organizational perspective. It analyzes quality improvement programs and examines their adaptability to the healthcare environment.
HSAM 302	Health Care Management II	3	This course explores the manager's role in creating and maintaining a productive health care workforce by understanding management theory and practice. It includes human resource planning, job analysis, recruitment, selection, development, work redesign, performance evaluation, and compensation and employee relations.

			Ethics, workforce diversity and changing demographics may also be covered.
HSAM 304	Population/Community Health	3	This course introduces students to the field of public health and epidemiology, emphasizing the socio-cultural factors associated with the distribution and etiology of health and disease.
HSAM 306	Health Care Law	3	This course gives an overview of general law and health care issues. It explores aspects of employer-employee relations in the health care setting and the legal ramifications of patient treatment and medical records.
HSAM 308	Ethics in Health Care	3	This course explores and analyzes contemporary health care situations in terms of ethics. Topics may include patient-caregiver relationships, medical experimentation, confidentiality of medical records and death and dying.
HSAM 310	Professional Development	3	This course is designed to help students develop a firm foundation of business, career assessment, resume writing, entrepreneurship and interviewing techniques necessary to succeed and emerge as leaders in corporate America healthcare systems. It combines lecture, interactive discussions, simulations and periodic guest lecturers as part of the total learning experience.
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HSAM 402	Long-term Care Administration	3	This course examines services provided after hospitalization by skilled nursing facilities, inpatient rehabilitation facilities, nursing homes, home health care, and long-term care hospitals. Post-acute care is examined to show the effect of smooth transitions, and to create an understanding of how this care fits into the continuum of care in managing risk in the healthcare reform environment.
HSAM 480	Health Services Administration Internship I	4	This course provides knowledge-based scenarios, educational and clinical exercises to explore how the core competencies of communication skills, professional behavior, analytical and critical thinking, evidence-based decision making, administrative and management skills, cultural sensitivity and legal and ethical proficiency are practiced in the clinical environment. A minimum of 120 hours is required in a clinical setting.

HSAM 490	Health Services Administration Internship	4	This course provides a hands-on educational and clinical experience within healthcare
	II		settings such as hospitals, clinics, long-term care facilities, and doctor's offices. A minimum of 120 hours is required in a clinical setting.
Elective courses: Minimum of 11 courses, 33 credit hours			
IDIS 215	Nutrition in Health Science	3	This course provides students with content related to principles of nutrition; therapeutic nutrition of specific clinical disorders and current consumer nutrition related issues.
IDIS 240	Medical Terminology	3	The course introduces students to common medical terms in health care. Students learn principles of medical word building and terms specific to the human body systems, standardized medical abbreviations, acronyms, and meanings associated with these systems. Basic examination procedures and positions, common blood, urinalysis lab, and diagnostic tests are included.
ACCT 211	Principles of Accounting	3	This course focuses on accounting principles, conventions, and concepts underlying financial reporting. Emphasis is placed on the accumulation of financial data, the processes of organizing it for presentation, and its use by managers for decision-making.
ECON 211	Introduction to Macroeconomics	3	This course is a study of the basic macroeconomic concepts, economic institutions, and tools of analysis used in understanding the problems of inflation and unemployment, and the effects of fiscal and monetary policies on economic stability and growth.
ECON 212	Introduction to Microeconomics	3	This course is a study of how the price of a product, or a resource is determined under various market structures, how an economy's resources are allocated, and how factor incomes are determined. Current problems in domestic and international economics are explored.
MGMT 440	Business Strategy and Policy	3	This course examines processes by which organizations, especially profit-seeking businesses, scan and adapt to their environments. Issues to be examined include the planning function, development of goals and objectives, assessment of requisite organizational competencies, appropriate structure, and related issues of strategy, policy and competitive posture.
MGMT 344	Organizational Behavior	3	This course focuses on the managerial analysis of human behavior in organizations, with special emphasis on organizational theory and application to case studies and real situations. Topics include motivation, perception, communication, leadership, power and negotiations, group behavior, organizational culture and change.

BUIS 360	Information Systems for Management	3	This course is a survey of the concepts, theory, and techniques of information systems for management. Emphasis is on the role of
			information itself and on computer-based information systems as aids to the control and operation of the organization. Case studies are used to illuminate the general manager's role in planning, specifying requirements, and evaluating and controlling such systems.
NURS 320	Cultural Diversity and Special Populations in Health Care	3	The focus of this course is on diverse populations in health care and factors of diversity which include culture, race, language, and communication, that impact health and the care of the targeted population. This course is designed to help students recognize the significance of diversity, and develop cultural sensitivity and competence that will enhance the ability to care for, and meet the needs of, the ever-changing diverse populations in health care.
FINA 320	Principles of Finance	3	This course is an introduction to the principles, concepts, and techniques of business finance. This course focuses on the fundamentals of financial analysis, management of current assets, capital budgeting, capital structure, and external financing.
MKTG 231	Principles of Marketing	3	This course is an introduction to the field of marketing and the issues of marketing management. Areas of study include consumer behavior, social responsibility of marketers, marketing of goods and services, industrial marketing, and logistics of distribution, pricing, product-planning and development, promotion, the selling function, and government regulations.
MATH 155	Introduction to Probability and Statistics	3	This course aims to develop the basic statistical skills pertinent to a wide range of applications. The range of applications encompasses such diverse areas as the Social Sciences, the Life Sciences, Business, Agriculture, and Education. Topics include random variables, data distributions, descriptive statistics, discrete and continuous probability models, statistical inference, hypothesis testing, and correlation and regression.
PSYC 204	Statistics 1	3	This course is an introduction to basic descriptive and inferential statistics as they are utilized in psychology and education.

NURS 390	Introduction to Nursing Research	3	This course introduces students to general principles and concepts related to the research process in nursing practice and theory. Emphasis is given to the role of the professional nurse as a consumer of research; expanding decision making using research findings; and evaluating the usefulness of research findings for current practice.
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Letter of Support

31 March 2022

I write this letter in support of the new Bachelor of Science in Health Services Administration (HSAM) Program to be offered by the College of Professional Studies. This Program is consistent with many objectives of the university’s strategic plan, most apparently Goal 1, Objective 1.1 (High demand, innovative academic programs) and Goal 1, Objective 1.2 (High-impact activities). The HSAM Program will contribute to the university’s strengths in healthcare and nursing, as well as support the continued growth of the institution. I also recognize the potential pipeline of pre-nursing students who would be attracted to the HSA Program if they do not meet the nursing requirements. Regarding Objective 1.2, Health Services Administration is a very practical discipline with an orientation towards experiential learning, as evidenced by the two internship courses HSAM 480 and 490 (HSAM Internship I and II, respectively).

The HSAM Program will have a significant academic relationship with the College of Business because it requires multiple supporting Business courses that range from fundamental (Principles of Accounting) to advanced (Organizational Behavior). Such courses will enhance students’ business acumen and support the development of their foundation in various management, accounting, economics, and information systems concepts. These Business courses reflect the HSAM Program’s emphasis on preparing students for healthcare management-related careers, such as healthcare services manager, health information analyst, or clinical managers. The Bureau of Labor Statistics anticipates that Medical and Health Services Managers will grow by 32 percent, which is one of the fastest growing careers through 2030 (in comparison to the 8 percent average for all other occupations). The median annual pay for workers in this field is \$104,280, also substantially higher than the \$41,950 average annual pay for all other occupations.

Given the advancements in business data systems, technology, and the challenges associated with caring for an aging US population, students will need a competitive skillset and therefore benefit greatly from the new HSAM Program. Based on the data above, the demand for healthcare professionals will grow substantially in the next decade. Clearly, this program is important as Bowie State University seeks to provide future students with skills that support their understanding of the business of healthcare.

Regards,



Dean and Professor of Economics
Lawrence McNeil, Ph.D.



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

TOPIC: Academic Program Proposal:
Coppin State University: Bachelor of Science in Cybersecurity Engineering

COMMITTEE: Education Policy and Student Life

DATE OF COMMITTEE MEETING: Tuesday, January 10, 2023

SUMMARY: The Bachelor of Science in Cybersecurity Engineering (CYSE) will provide the knowledge and skills for the development of cyber-resilient systems that include the protection of intended human users, hardware and accompanying computing devices, and the networks that connect them (i.e., the internet). The purpose of the proposed program is to provide students with the currently rare combination of highly technical knowledge and skills, cybersecurity expertise, with a system engineering approach. Systems engineering is an interdisciplinary field of engineering and engineering management that focuses on how to design and manage complex systems over their life cycles. The CYSE program has a specific emphasis on securing Medical Cyber-Physical Systems (MCPS). Degree recipients will be postured to fill most cybersecurity titles, which are in desperate demand today and for the foreseeable future. Graduates will be trained to work on emerging trends, designing, and developing comprehensive trustworthy architectures to accommodate MCPS telecommunication and telemedicine devices. Coppin State University (CSU) is the first in the State of Maryland to undertake engineering cybersecurity systems.

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 fees.

CHANCELLOR'S RECOMMENDATION: That the Education Policy and Student Life Committee recommend that the Board of Regents approve the proposal from Coppin State University to offer the Bachelor of Science in Cybersecurity Engineering.

COMMITTEE RECOMMENDATION: DATE: January 10, 2023

BOARD ACTION: DATE:

SUBMITTED BY: Joann A. Boughman 301-445-1992 jboughman@usmd.edu



OFFICE OF THE PRESIDENT

December 8, 2022

Dr. Jay A. Perman, Chancellor University
System of Maryland
Chancellor's Headquarters/Baltimore Office 701 E.
Pratt Street
Baltimore, MD 21202 Dr.

Chancellor Perman:

I am requesting your approval of Coppin State University's proposal to offer a B.S. in Cybersecurity Engineering with program codes HEGIS 0925.00 and CIP 11.1003. The program aligns with the university's STEM goals, meets a compelling workforce demand, and contributes to the innovation and economic growth goals of Maryland as identified in the University System of Maryland's Strategic Plan.

The proposal has the approval of appropriate campus committees and was submitted to me for my endorsement. I am pleased to recommend this proposal and request your approval. Should you have any questions, please contact me or my staff. Additionally, you may contact Dr. Pamela R. Wilks, Provost and Vice President for Academic Affairs.

Sincerely,

A handwritten signature in blue ink, appearing to read "Anthony L. Jenkins, P.", written over a printed name and title.

Anthony L. Jenkins, P
President

.cc: Dr. Pamela Wilks, Provost & Vice President for Academic Affairs

UNIVERSITY SYSTEM OF MARYLAND INSTITUTION PROPOSAL FOR

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

Coppin State University

Institution Submitting Proposal

Bachelor of Science in Cybersecurity Engineering

Title of Proposed Program

Bachelor of Science

Award to be Offered

Fall 2023

Projected Implementation Date

0925.00

Proposed HEGIS Code

11.1003

Proposed CIP Code

Mathematics and Computer Science

Department in which program will be located

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Signature of President or Designee

12/8/2022

Coppin State University
Proposal for Bachelor of Science in Cybersecurity Engineering (CYSE)

A. Centrality to Institutional Mission 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 Bachelor of Science in Cybersecurity Engineering (CYSE) will provide the knowledge and skills for the development of cyber-resilient systems that include the protection of intended human users, hardware and accompanying computing devices, and the networks that connect them (i.e., the internet). The program requires a proactive approach in engineering the design of systems, with cybersecurity incorporated from the beginning of system development. The purpose of the proposed program is to provide students with the currently rare combination of highly technical knowledge and skills, cybersecurity expertise, with a system engineering approach. Systems engineering is an interdisciplinary field of engineering and engineering management that focuses on how to design and manage complex systems over their life cycles. The CYSE program has a specific emphasis on securing Medical Cyber-Physical Systems (MCPS). Degree recipients will be postured to fill most cybersecurity titles, which are in desperate demand today and for the foreseeable future. Graduates will be trained to work on emerging trends, designing, and developing comprehensive trustworthy architectures to accommodate MCPS telecommunication and telemedicine devices. Coppin State University (CSU) is the first in the State of Maryland to undertake engineering cybersecurity systems.

Coppin is an urban, comprehensive Historically Black College/University (HBCU) committed to serving Baltimore City and educating a multi-generational student population. Therefore, consistent with its mission, and strategic goals, Coppin seeks to expand its capacity to offer unique and critical Medical Cyber-Physical Systems (MCPS)-focused CYSE degree program. In the fall of 2013, Coppin established a STEM Center designed to provide coordination of academic programming and initiatives to strengthen the pipeline of STEM graduates to the Maryland workforce and form partnership agreements with federal agencies. The implementation of the BS in CYSE would be a magnificent achievement, allowing Coppin's diverse community the opportunity to place greater emphasis on culturally responsive STEM education, creative problem-solving, and career development. The BS in CYSE enhances Coppin's culturally relevant story in a way that increases the public perception of the university. The program will help increase interest and enrollment and increase fundraising results while highlighting and promoting research and engagement to garner national attention and leadership. With an infrastructure comprised of demanding STEM programs, housed in a cutting-edge facility, coupled with access to state-of-the-art equipment, this program will help Coppin enhance and maintain its place within the competitive global marketplace.

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

The proposed program supports Coppin's strategic goals and strategic institutional priorities. According to Coppin's Strategic Plan (<https://www.coppin.edu/cs-u-strategic-planning>), the proposed CYSE program will support the following goals (recently approved Fall 2021 and is currently aligned with the University's recent launch of the strategic planning process):

Goal 1. *Become a University of Choice* - by increasing innovation in academic programs and curricula

activities with the workforce development needs of Baltimore City and the state of Maryland;

Goal 2. - *Improve the holistic development and completion rates of our students* by aligning Coppin's programs with the national needs of Baltimore city and the state of Maryland;

Goal 3. - *Strengthen our brand and reputation as a leader in urban higher education* by offering a critical need based unique CYSE program and also support aligning Coppin's Strategic Plan and Coppin's branding together with the University System of Maryland (USM) Strategic Plan, Vision 2030: From Excellence to Preeminence (<https://www.usmd.edu/vision2030/>); and

Goal 4. *Enhance our teaching and research excellence* - by competing for state and national recognition of academic programs in the CYSE-STEM space area.

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.)

Coppin State University will support the proposed CYSE BS degree program through the same process and level of support as the University's existing programs. The University has also budgeted funds to support program and course development, online support, office materials, travel, professional development, and initial marketing. There is no substantial impact on the institution due to the advanced budgeting of these funds. If approved, the program will be self-sustaining going forward.

The CYSE program has administrative leadership commitment and additional funds and faculty lines have been committed for this program to be adequately funded for five or more years, especially as the program continues to grow. The program is housed within the Department of Mathematics and Computer Science showing further leveraging of related curricula and mathematics and computer science faculty which is interconnected intrinsically when the CYSE program becomes operational.

The *growth* of this new CYSE program will further be accomplished via the promotion of education and research collaborations amongst students, faculty, other academic institutions, and industry partners across different disciplines including Computer Science, Engineering, Mathematics, Health Information Systems, and others. Internships (paid and unpaid) along with student scholarships will also be sought in order to attract an increasing number of students each year. This new program will significantly aid the University in increasing enrollment as it develops a cybersecurity niche in the crowded academic market. With Coppin situated close to Washington, D.C., this Cybersecurity Engineering program will bring in government agencies and private sector employers to provide internship training opportunities.

4. Provide a description of the institution's commitment to:

- a) Ongoing administrative, financial, and technical support of the proposed program

The proposed program is an integral part of the University's Strategic Plan. The institutional and departmental budgets for FY 2022-2023, as well as the forecasted budgets going forward, include funding for the administrative, financial, and technical support of the new degree.

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

Coppin is fully committed to continuing the proposed BS degree. in the Cybersecurity Engineering program for a sufficient period to allow enrolled students to complete the program.

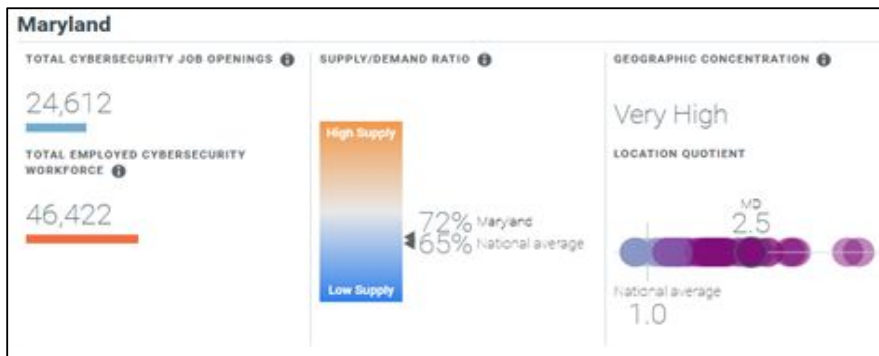
B. Critical and Compelling Regional or Statewide Need as Identified in the State Plan:

- 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

Cybersecurity Engineering is the subject of maximizing university resources by way of expanding and deploying advanced science and technology. There are a few more critical concerns facing the world and there is no pathway to achieve them currently this proposal is to offer a solution based on the STEM knowledge needed for Cybersecurity experts to acquire exploration skills in addition to their digital forensic systems knowledge.

Furthermore, Cybersecurity talent gaps exist across the country. Closing these gaps requires detailed knowledge of the cybersecurity workforce in Maryland region with the Maryland cybersecurity job opening quotient of 2.5 being more than double when compared to the national average of 1.0.



Source: <https://www.cyberseek.org/heatmap.html>

However, the nation’s rapidly growing cybersecurity jobs market has many more openings available than trained workers to fill them. For example, there are 128,000 positions for “Information Security Analysts,” but only 88,000 workers are currently employed in those positions—a talent shortfall of 40,000 workers for cybersecurity’s largest job, according to analytics firm Burning Glass Technologies. Jobs requesting cloud security skills remain open 96 days on average—longer than any other IT skill.

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

An HBCU (Historically Black College and University), Coppin has a culturally-rich history as an institution providing quality educational programs and community outreach services. In 2020, 415 degrees were awarded across all undergraduate and graduate programs at Coppin State University. 81.9% of these degrees were awarded to women, and 18.1% were awarded to men. The most common race/ethnicity group of degree recipients was black or African American (332 degrees), 23.7 times more than then the next closest race/ethnicity group, white (14 degrees). <https://datausa.io/profile/university/coppin-state-university>

The employment need for cybersecurity talent is acute and the Coppin Cyber Security Engineering Bachelor of Science program is being proposed to fill this void.

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

The proposed CYSE degree program will significantly strengthen and expand the capacity of Coppin State HBCU, one of the four historically black institutions in state, to provide high-quality, high-demand, and unique systems-engineering-based Cybersecurity educational experiences to students.

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

The proposed CYSE BS degree program at Coppin is well aligned with the 2021-2025 Maryland State Plan for Higher Education, (<https://mhec.maryland.gov/Pages/2021-2025-Maryland-State-Plan-for-Higher-Education.aspx>).

The CYSE skill set drives the demand for information security analysts, employment of which is projected to grow by 31.6 percent and translates to over 3.5 million unfilled cybersecurity jobs globally by 2021. As indicated earlier, Cybersecurity talent gaps exist across the country. Closing these gaps requires detailed knowledge of the cybersecurity workforce in Maryland region.

As more connected devices enter homes and workplaces, the present and future need for robust online security positions increases, creating a cybersecurity workforce gap in the U.S. is about 500,000 people which estimates that the cybersecurity industry needs a 62% talent increase to meet business demands.

The CYSE program framework (adapted from the National Institute of Standards and Technology (NIST) ensures state-of-the-art curricula bridging the present and future capabilities needs at Coppin. This program is designed to provide students with new knowledge and problem-solving skills sets in emerging Cyber-war-fare situations, so they maintain the skills they need to succeed in the workforce. Therefore, the proposed Cybersecurity Engineering program is to ensure that Coppin a HBCU/MI is competitive, both in terms of program and infrastructure, with Maryland's other institutions.

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.

Graduates from the proposed CYSE program will possess advanced cyber engineering systems knowledge in areas such as Cyber-Physical Medical Systems, Secure Medical Systems I, II, Secure RF Communication, Security Artificial Intelligence, MIS Digital Forensics, Cybersecurity Engineering, and Digital Electronics courses with the ability to serve as top leaders in their field. They will also be able to serve as consultants and work in private companies or government agencies. In addition, supporting those related to the nation's cyber defense will be served by this degree.

The graduates of the CYSE BS Degree program are expected to enter the following employment opportunities:

Cybersecurity Systems Engineer	Systems Administrator
Cybersecurity Manager	Cybersecurity Consultant
Cybersecurity Analyst	Penetration & Vulnerability Tester
Network Engineer	Cybersecurity Specialist

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

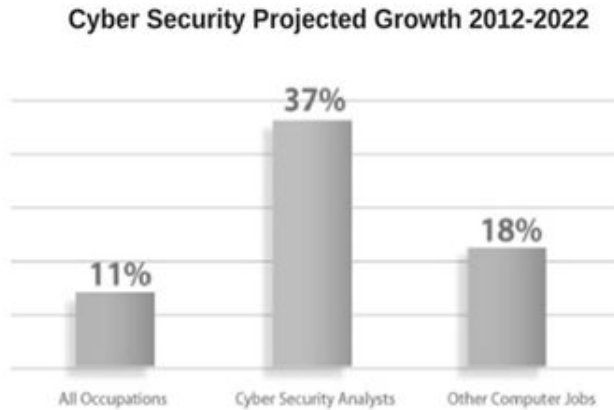
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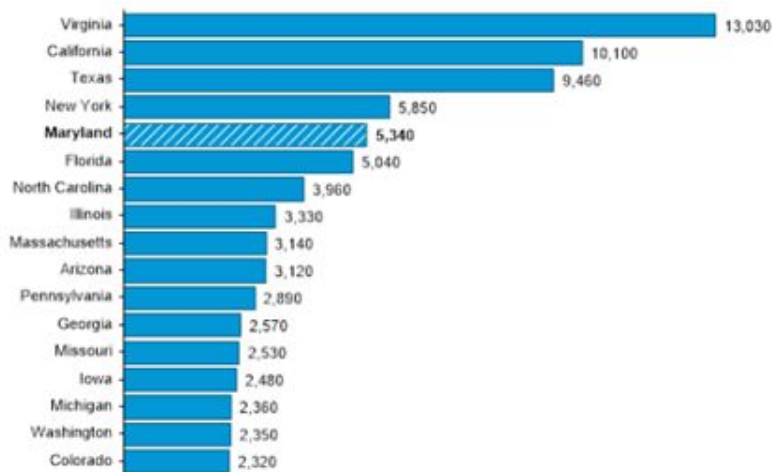
Currently, the Cybersecurity unemployment rate is at 0%. Underrepresented minority groups comprised 28.5 percent of our national population in 2006, yet just 9.1 percent of college-educated Americans in S&E to triple to match their share of the overall U.S. population. The employment need for cybersecurity talent is acute and the Coppin Cyber Security Engineering Bachelor of Science degree is being offered to fill this void.

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.

Government researchers, cyber engineers, and other agencies anticipate that there will predominantly Cyberwars (after 9/11) Cross Agency (47 Intelligence Agencies) , John (Chris) Inglis et al (<https://www.youtube.com/watch?v=dBZEvIdPH2o>). The State and nation will need professionals in the discipline to protect the country and advance knowledge of cybersecurity engineering systems.



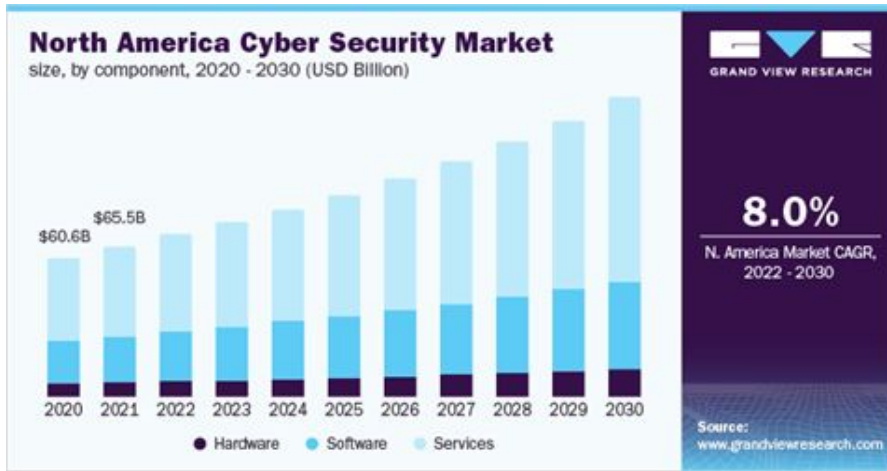
Within Maryland, there are many industries needing cybersecurity systems engineers. Remarkably, the data below show the need to support cybersecurity engineers' positions and widen its pool of people is increasing.



(<https://gritinaaction.umbc.edu/wp-content/uploads/Cybersecurity2.png>)

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

The global cybersecurity market size was valued at USD 184.93 billion in 2021 and is expected to expand at a compound annual growth rate (CAGR) of 12.0% from 2022 to 2030. Consequently, organizations are expected to adopt and deploy advanced cyber security solutions to detect, mitigate, and minimize the risk of cyber-attacks, thereby driving current and projected market growth with a proportionally need to prospective graduates in all areas of Cyber engineering ranging from hardware, software, and systems management services. (www.grandviewresearch.com/industry-analysis/cyber-security-market)



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.

Maryland institutions offering cybersecurity BS degrees are:

Institution	Program	Degree
Bowie State University	Cyber Operations Engineering	Bachelor
Capitol Technology University	Construction Info Tech & Cybersecurity	Bachelor
Capitol Technology University	Cyber Analytics	Bachelor
Capitol Technology University	Cybersecurity	Bachelor
Capitol Technology University	Management Of Cyber & Info Technology	Bachelor
Morgan State University	Cybersecurity Intelligence Management	Bachelor
Mount St. Mary's University	Cybersecurity	Bachelor
SANS Technology Institute	Applied Cybersecurity	Bachelor
SANS Technology Institute	Applied Cybersecurity	Bachelor
Stevenson University	Cybersecurity & Digital Forensics	Bachelor
Univ. of Maryland University College	Cybersecurity Management and Policy	Bachelor
Univ. of Maryland University College	Cybersecurity Technology	Bachelor
University of Baltimore	Cyber Forensics	Bachelor

Source: https://mhec.maryland.gov/institutions_training/Pages/searchmajor.aspx

All cybersecurity BS degree programs compared above prepare graduates in cybersecurity operation, management, policy, technology, and related specializations. Bowie State University may be considered the most like what Coppin is proposing. However, the institution offers a Bachelor of Science degree in Cyber “Operation” Engineering (not Systems Engineering).

Whereas Coppin State University (CSU) is the first in Maryland state to undertake a Cybersecurity *Engineering* (CYSE) BS degree program. CSU's proposals are distinct from all other offerings in that it focuses on the rare combination of providing highly-technical knowledge and skills, cybersecurity expertise, with a systems engineering approach. Systems engineering is an interdisciplinary field of engineering and engineering management that focuses on how to design and manage complex systems over their life cycles. CSU's CYSE program also has a specific emphasis on securing Medical Cyber-Physical Systems (MCPS). Degree recipients will be postured to fill most cybersecurity titles, which are in desperate demand today and for the foreseeable future. Graduates will be trained to work on emerging trends, designing, and developing comprehensive trustworthy architectures to accommodate MCPS telecommunication and telemedicine devices. Coppin State University (CSU) will be the first in the State of Maryland to undertake engineering cybersecurity systems.

2. Provide justification for the proposed program.

Systems engineering is an interdisciplinary field of engineering and engineering management that concentrates on how to design and manage complex systems over their life cycles. None of the institutions compared earlier deliver "systems Engineering" content that has a specific emphasis on securing Medical Cyber-Physical Systems (MCPS), in which there is a great demand throughout Maryland and the nation. Coppin's proposed program will prepare graduates to fill most cybersecurity titles listed few paragraphs above and these CYSE job opportunities are in desperate demand today and will remain for a greater length of time.

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.

Coppin will not have any undesirable impact due to the implementation or maintenance of high-demand programs at HBIs. There are no BS degree programs in Cybersecurity Engineering at any of Maryland's HBCUs or the rest of the United States. The proposed BS degree in Cybersecurity Engineering would be the first.

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.

Coppin will not have any undesirable impact on the uniqueness and institutional identities and mission. There are no BS degree programs in Cybersecurity Engineering in Maryland or the rest of the United States. The proposed BS degree in Cybersecurity Engineering would be the first.

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.

Coppin's faculty team within the Department of Mathematics and Computer Science established the proposed program through a rigorous review of unmet academic program needs. The CYSE BS degree program proposal was prepared with assistance from a cybersecurity qualified consultant. The program proposal along with the nineteen (19) CYSE new course syllabi were presented to Coppin's Curriculum Standards and Policy Committee, and all were approved by the Provost and Vice President of Academic Affairs. Dr. Atma Sahu, Professor, and Chair of the Mathematics and Computer Science department will oversee the program.

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

BS CYSE Program Objectives

Graduates earning the Bachelor of Science degree in Cyber Security Engineering at Coppin State University are expected within **three to five years after graduation** to be professionals who:

- Establish themselves in a successful cyber security engineering career in industry or government
- Communicate and perform ethically and effectively as members or leaders of multi-disciplinary teams
- Stay current through continuing education opportunities, professional conferences, graduate school, and other self-learning experiences; have the ability to obtain and maintain professional licensing

BS CYSE Program Education Learning Objectives

Graduates earning the Bachelor of Science degree in CYSE Engineering at Coppin State University at the time of graduation have (adapted from Accreditation Board for Engineering and Technology (ABET) criterion number (3): At the end of the program graduation the graduates will be able to:

- (a) Apply knowledge of mathematics, science, and engineering
- (b) Design and conduct experiments, as well as to analyze and interpret data
- (c) Design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability
- (d) Function and contribute to multidisciplinary teams
- (e) Identify, formulate, and solve engineering problems
- (f) Deliver professional and ethical responsibility
- (g) Communicate effectively
- (h) Demonstrate the broad education necessary to understand the impact of engineering solutions in as global, economic, environmental, and societal context
- (i) Recognition of the need for, and an ability to engage in life-long learning
- (j) Exhibit knowledge of contemporary issues

(k) Employ the techniques, skills, and modern engineering necessary for engineering practice.

Source: <https://www.abet.org/accreditation/accreditation-criteria/criteria-for-accrediting-engineering-programs-2021-2022/>

Learning Outcomes:

As indicated above in assessment and evaluations paragraphs the Institutional (Middle States), ACM (Association for Computing Machinery) and ABET student's learning outcomes that are aligned with CYSE course concepts will be monitored.

Upon graduation:

CYSE COURSE CONNECTIONS WITH LOs	
Primary CYSE Courses for the Purpose of Learning Outcome Assessment	Learning Outcomes (Los)
CYSE 101 Intro.to Engineering	c, e, j
CYSE 107 Intro.to Cyber Security Engr.	d, e
CYSE 391 Defensive Programming	b, k
CYSE 386 Info. Assurance	c, e
CYSE 393 Introduction to Network Security	b
CYSE 394 Network and Protocols	a, k
CYSE 301 Digital Electronics	c, e
CYSE 411 Secure Systems Design	d, g
CYSE 425 Secure RF Communication	a, e
CYSE 450 Cyber Vulnerability Lab	b, e
CYSE 459 Senior Advance Design Project	b, c, d, f, i
CYSE 424 CPS Cybersecurity AI	b, d
CYSE 426 Principles of CPS	a, g
CYSE 428 Secure Medical Info. Systems II	a, e
CYSE 484 Spec Topics in CYSE	a, b
CYSE 485 Security Tools for Info.	e, k, b
CYSE 491 Hacking of Unix Binaries	b, k
CYSE 495 MIS Digital Forensics	c, g, i
CYSE 497 MCPS Security & Privacy	b, c, d, f, i
CYSE 496 Engineering Senior (seminar)	d, f, g, h, i

Overview of Technical Learning Outcomes:

Learning outcomes and appropriate measures in four key areas:

- (1) Technical Foundations
- (2) Problem and Requirements Identification
- (3) Solution Evaluation
- (4) Solution Development and Implementation.

In relation to each of these four key areas, students will be able to:

Technical Foundations

- Demonstrate and apply knowledge in core technical areas.
- Demonstrate knowledge of software and operating systems, hardware, telecommunications networks, and cryptography theory and operation.
- Apply knowledge to the design, testing, exploitation, and security of devices, systems, and connecting networks.

Problem and Requirements Identification

- Identify contemporary cybersecurity threats to cyber resilient systems.
- Examine vulnerabilities in information technology, hardware systems, and software systems to gain experience in engineering cyber resilient systems to mitigate cybersecurity threats. Integrate relevant research findings to improve cybersecurity engineering practices.

Solution Evaluation

- Apply risk frameworks in the analysis of cybersecurity threats to system and mission design objectives.
- Conduct qualitative and quantitative vulnerability, threat, and cybersecurity risk assessments to Information Technology (IT) and Operational Technology (OT) systems, components, and processes.
- Analyze cyber-physical systems and identify their interdependencies on each other. Conduct economic analyses in the development of cybersecurity engineering recommendations.
- Demonstrate knowledge of the regulatory and standards landscape required to design, protect, and evaluate cyber resilient systems.
- Apply engineering economic analysis in the assessment of costs/benefits of alternative cybersecurity engineering solutions.

Solution Development and Implementation

- Apply Cybersecurity Engineering principles in each phase of the systems development life cycle.
- Demonstrate critical thinking in the application of cybersecurity engineering principles to identify, formulate, and engineer cybersecurity solutions.
- Apply commonly used cybersecurity software and tools to identify and mitigate security risks in the systems development life cycle. Design, synthesize, and apply Cybersecurity Engineering solutions within an Enterprise Security Architecture.
- Demonstrate knowledge of the Enterprise Security Architecture process.
- Identify and evaluate cybersecurity engineering alternatives within the Enterprise Security Architecture.

3 b) document student achievement of learning outcomes in the program

Overview of CYSE Student Assessment at Coppin State University

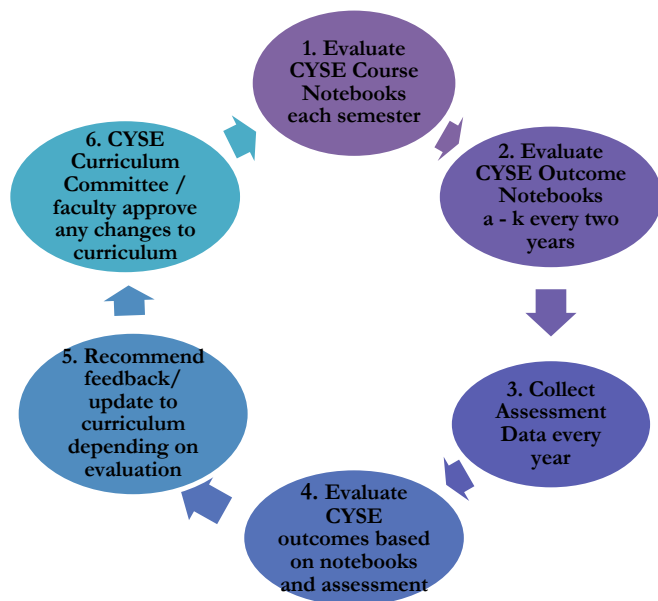
Students learning outcomes will be assessed in each core course through various mechanisms that include:

- (1) CYSE Course-Lab projects
- (2) Case studies and problem-solving exercises
- (3) Homework assignments

- (4) Term papers
- (5) Presentations (Individual and Groups) in class or students-conferences
- (6) Formative and Summative: tests and exams, homework, quizzes and discussions
- (7) Capstone Project - The Cyber Security Engineering Capstone Project is the culminating application of the students’ Comprehensive knowledge and skills acquired from the proposed program. The learning outcomes for the program are specific to undergraduate-level knowledge, skills, and abilities that students should acquire in the degree program. Student learning outcomes will be assessed across the curriculum on the scale illustrated below. This scale will convert to the A-F grading system currently used at Coppin.

Level	Description
A	Greatly Exceeds Expectations
B	Exceeds Expectations
C	Meets Expectations
D	Needs Improvement
F	Fails to Meet Expectations

The Program Coordinator with Mathematics and computer science chairman, and CYSE Faculty will set key performance indicators and will evaluate and assess the program on a yearly basis continuously as shown in the diagram below:



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

The Department of Mathematics and Computer Science along with the support and commitments from Provost and President CSU will have faculty, lab structure, state-of-the-art classrooms equipped with advanced technology and all needed capacity to be able to gain ABET accreditation.

The current and proposed departmental courses to be used in this new academic program are illustrated below:

List of Proposed Course Descriptions for B. S. in Cybersecurity Engineering Program includes the following courses 3 credit hours, unless otherwise different credit hrs. mentioned.

<p>CYSE 101: Introduction to Engineering. Components, Quantities, and Units; Series Circuits; Digital Concepts; Number Systems and Programming Concepts. Co-requisite(s): Math Placement Test score qualifying student for MATH 131.</p>	<p>CYSE 426: Secure Medical Info. Systems I. Medical Community of Interest (MedCOI) network technology, Health IT Training, Acquisition Management Support Program Affordability and Cybersecurity and Risk Management Framework (RMF) all within the area of Health Care IT services. Electronic Health Records (EHR). Innovative Health IT Solutions. Health IT Research. Health Care IT Engineering and Technical Services. Required Prerequisites: CYSE 411</p>
<p>CYSE 107: Introduction to Cyber Security Engineering. Principles, Applications, and Practice of cyber security engineering (e.g., concepts, terminology, systems engineering, design processes, and Secure Software Development Life Cycle). Prerequisite or corequisite: CYSE 101</p>	<p>CYSE 428: Secure Medical Info. Systems II Maintaining and modifying moderately complex Health IT Cyber Security technologies. Project planning, guidance, and technical expertise in the following areas pertinent to Health IT: Cyber Security engineering program, policy, process, and planning; risk management, auditing, and assessments; Assessment and Authorization (A&A), QA, and QC planning. Prerequisites: CYSE 301 and CYSE 426</p>
<p>CYSE 221 Introduction to C and C++ Programming Computer components, algorithm design with flowcharts, pseudo-code, and algorithm implementation. Apply programming, documentation, debugging/testing techniques to problem solving and data analysis. Basic data types, the C++ string class, variables and constants, and</p>	<p>CYSE 450: Cyber Vulnerability Lab, 1 Credit Hands-on experience in security issues of network systems. Issues in ethical hacking, penetration testing, forensics and incident handling and response using virtual machines. A hands-on lab course, with short lecture introductions</p>

<p>their declaration, basic input/output operators, assignment operators, arithmetic operators, and object-oriented elements. This course qualifies to be equivalent COSC 221 Prerequisites: MATH 131 or higher</p>	<p>Prerequisites: CYSE 393 and CYSE 391</p>
<p>CYSE 301: Digital Electronics Digital systems, circuits, and computers (e.g., binary systems and codes, digital logic gates, microelectronics, and integrated circuits, computer architecture). Required Prerequisites: MATH 405 or PHYS 304</p>	<p>CYSE 459: Senior Advanced Design Project, 2 Credits First semester of a two-semester capstone course in Cyber Security Engineering Program. Development of a design project by a team of students. Conception of the project and determination of its feasibility. Work includes developing preliminary design and implementation plan. Projects will aim at the integration of the technical material learned in several courses and incorporation of industry input. Required Prerequisites: CYSE 428</p>
<p>CYSE 386: Information Assurance. Authentication, access control, security models, Cryptography, cybersecurity using Unix and Win NT, enumerated and classified assets, identify threats, risk management planning and development. Prerequisite: CYSE 107</p>	<p>CYSE 484 Special Topics in Cyber Security Engr Special Topics in the Cyber Security Engineering area, with different content in different terms. Offered by CSU. May be repeated within the term for a maximum of 6 credits. Required Prerequisites: CYSE 426</p>
<p>CYSE 391: Defensive Programming in C Defense by design, removing explicit vulnerable code, building validation, designing a public interface, and unifying error flows, and develop defensive design practices. Required Prerequisites: CYSE 221</p>	<p>CYSE 485: Security Tools for Information Security Perform host- and network-based security tasks relating to security, investigation, compliance verification and auditing using a wide selection of commonly used tools on both Windows and Linux platforms, with emphasis on open-source tools. Required Prerequisites: CYSE 393</p>
<p>CYSE 393: Introduction to Network Security Cryptography applications in networks. Firewalls architectures, VPNs, network and routing protocols, DNS, e-mail, and wireless network security. Required Prerequisites: CYSE 107</p>	<p>CYSE 491: Hacking of Unix Binaries In-depth discussion on various security vulnerabilities (e.g., buffer overflows) in C applications. Analyzing at the assembly level. Discusses best practices and design principles for secure programming. Required Prerequisites: CYSE 391</p>
<p>CYSE 394: Network and Protocols Overview of Network Protocols: TCP/IP, NAT, DHCP, IPsec, ICMP, SMTP, DNS, IPv6, Bellman-Ford and Dijkstra algorithms, RIP, OSPF, IGRP, EIGRP, and BGP.</p>	<p>CYSE 495: MIS Digital Forensics Investigation Principles of collection, preservation, examination, and analysis of computer evidence. Evolving law of acquiring and</p>

<p>Required Prerequisites: CYSE 107</p>	<p>analyzing digital evidence from computers and devices, and the presentation of legal evidence in a court of law, and history of gray hat hacking.</p> <p>Required Prerequisites: CYSE 385</p>
<p>CYSE 411: Secure Software Engineering Software engineering concepts, methods, and practices important to both the theorist and the practitioner. The entire range of responsibilities expected of a software engineer. Requirement’s development, software design, programming languages, supporting systems engineering Required Prerequisites: CYSE 391.</p>	<p>CYSE 496: Engineering Senior Seminar 3 Credits This course covers a variety of responsibilities of cyber security engineers including engineering ethics, government policies, laws and regulations affecting cyber security engineering, industry practices, and entrepreneurship. Required Prerequisites: CYSE 460</p>

<p>CYSE 424: Security Artificial Intelligence Curating threat intelligence from millions of research papers, blogs, and news stories. Using AI to fight through the noise of daily alerts, drastically reducing response times and using deep learning to reduce the endless cycle of manually updating signatures in response to the latest permutation, combining data points, crunching volumes of data. Required Prerequisites: CYSE 411</p>	<p>CYSE 497: CPS Medical Systems Overarching hospital CPS and technology functions: patient and provider engagement technologies, core technologies, HER, Supply chain management, data aggregation and management, reporting and analytics technologies, IT interoperability and integration. Required Prerequisites: CYSE 301 and CYSE 393</p>
<p>CYSE 425: Secure RF Communications Security issues in wireless networks, such as cellular networks, wireless LANs, Bluetooth, NFC, RFID, mobile security, anti-jamming communication, and physical layer security. Focus on wireless network attacks and proposed solutions and their limitations. Required Prerequisites: CYSE 301</p>	

Now, total support courses (MATH and Computer Science) and the core CYSE degree program courses are tabulated below:

Total Credits of Current Courses for CYSE Plan of Study: 26 hrs.

	HEGIS	Course #	Course Name	Credit Hours
1	COSC	220	Computer Science I	4
2	COSC	221	Computer Science II or CYSE 221 C++ Prog	4
3	COSC	310	System Programming	3
4	MATH	132	Pre-Calculus	4
5	MATH	201	Calculus I	4
6	MATH	202	Calculus II	4
7	MATH	301	Linear Algebra	3

Total Credits of New Courses for CYSE Plan of Study: 58 hrs.

	HEGIS	Course #	Course Name	Credit Hours
1	CYSE	101	Intro. to Engineering	3
2	CYSE	107	Intro. to Cyber Security Engr.	3
3	CYSE	221	C and C++ Prog or COSC 221 Computer Sc. II	4
4	CYSE	391	Defensive Programming	3
5	CYSE	301	Digital Electronics	3
6	CYSE	386	Info. Assurance	3
7	CYSE	394	Network and Protocols	3
8	CYSE	393	Introduction to Network Security	3
9	CYSE	491	Hacking of Unix Binaries	3

10	CYSE	411	Secure Systems Design	3
11	CYSE	425	Secure RF Communication	3
12	CYSE	424	Security Artificial Intelligence	3
13	CYSE	450	Cyber Vulnerability Lab	1
14	CYSE	459	Senior Advance Design Project	2
15	CYSE	424	Security Artificial Intelligence	3
16	CYSE	426	Secure Medical Info. Systems I	3
17	CYSE	428	Secure Medical Info. Systems II	3
18	CYSE	495	MIS Digital Forensics	3
19	CYSE	497	CPS Medical Systems	3
20	CYSE	496	Engineering Senior Seminar	3

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

The CYSE BS degree program is an addition to the two current degree programs offered in the Mathematics and Computer Science Department (BS in Mathematics & BS in Computer Science) and is expected to be implemented in the Fall 2023 semester. Courses will be taught during the spring and fall semesters. Modes of instruction will be face-to-face and practicum. The total number of credit hours required for completion is 122.

The CYSE program status sheet (**Total 122 credit hours**) is prepared for CYSE BS Degree program students and includes all COMAR GER requirements, Computer Science, Mathematics, and 19-CYSE Core courses. A brief account follows:

GERs :42 hrs. (English, Math. Hum and Fine Arts, Natural Sc and Physics, Social and Behavioral and Interdisciplinary)

Computer Science: 11 hrs. Java/C++ programming language and Systems programming. (Some Computer Science Courses have been re-designed to fit CYSE programming requirements and are counted twice to reflect CYSE's re-designed course code.)

Mathematics: 15 hrs. Pre-calc, Calc I, II, and Linear Algebra

Cybersecurity Engineering Core: 54 hrs. (19 courses) include among other areas—Cyber-Physical Medical Systems, Secure Medical Systems I, II, Secure RF Communication, Security Artificial Intelligence, MIS Digital Forensics, Cybersecurity Engineering, and Digital Electronics courses.

Nineteen (19) CYSE course syllabi based on the “Engineering-CYHIS” (Cyber Security in Health Information Systems) brand thrust were prepared and have been approved by the CSU Curriculum Standards and Policy Committee on April 20, 2022. These courses will soon be available on the CSU catalog. Thus, all courses (122 hrs.) in the CYSE program are university-approved.

The four-years semester-by-semester course schedule plan is tabulated below:

Cybersecurity Engineering B. S. Degree Course-Checklist: 122 Credits	
YEAR 1 = 32 Cumulative = 32	
FALL	SPRING
MATH 131(3) College Algebra	MATH 132 (4) Pre-Calculus
ENGL 101(3) English Composition I	ENGL 102 (3) English II
CYSE 101(3) Introduction to Engineering	CYSE 107(3) Intro. to Cyber Security Engineering
PHIL 102 (3) Introduction to Logic	COSC 220 (4) Computer Science I
HIST 205(3) African Am. History I or HIST 201 or HIST 203	HIST 202 (3) World History II or HIST204 or HIST206
15 credit hours	17 credit hours
YEAR 2 = 33 Cumulative = 65	
FALL	SPRING
MATH 201(4) Calculus I	PHYS 304 (3) Heat, Electricity & Magnetism
MATH 301(3) Linear Algebra	ECON 103 (3) Intro Bus & Ent
COSC 221(4) or CYSE 221 (4) C and C++ Prog.	CYSE 391(3) Defensive Programming
PHYS 303(3) Mech and Particle Dynamics	SPCH 105 (3) Speech Communication
WLIT 207 (3) World Lit or any 200 level English	MATH 202 (4) Calculus II
17 credit hours	16 credit hours
YEAR 3 =30 Cumulative = 95	
FALL	SPRING
CYSE 301 (3) Digital Electronics	CYSE 411 (3) Secure Software Engineering
CYSE 386 (3) Information Assurance	CYSE 424 (3): Security Artificial Intelligence
CYSE 393 (3) Introduction to Network Security	CYSE 425 (3) Secure RF Communication
CYSE 394 (3) Network and Protocols	CYSE 426 (3) Secure Medical Info. Systems I
CYSE 491 (3) Hacking of Unix Binaries	CYSE 495 (3): MIS Digital Forensics
15 credit hours	15 credit hours
YEAR 4 = 27 Cumulative = 122	
FALL	SPRING
CYSE 428 (3) Secure Medical Info. Systems II	CYSE 496 (3) Engineering Senior Seminar.
COSC 310 (3) Systems Programming	CYSE 497(3) CPS Medical Systems
CYSE 459 (2) Senior Advanced Design Project	CYSE 485 (3) Security Tools for Information
PSYC 201 (3) General Psychology	HEED 101(3) Health/Wellness or HEED 102,105, 110
SOCI 201 (3) Intro to Sociology	CYSE 450(1) Cyber Vulnerability Lab
14 Credit Hours	13 credit hours

TOTAL: 122 Credits Hours

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

After USM and MHEC approval, the program will be accredited nationally by Middle States Commission on Higher Education (MSCHE). However, as designed, it will follow the blueprint for specialized accreditation with ABET.

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

N/A. Coppin will not be contracting with another institution or non-collegiate organization.

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 CYSE BS degree 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 lab equipment requirements, Blackboard Ultra Learning Management System, availability of Eagle Academic Center (EAC) support services and financial aid resources, and costs and payment policies.

Curriculum, course, and degree information will be available on the university website and via email as well as regular mail if requested. The expectations for faculty/student interaction are available to students during virtual and face-to-face open house events, literature, website, etc. This information is also part of the material distributed for each course. Technology competence and skills and technical equipment requirements sharing are part of the material distributed for each course.

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 CYSE BS degree program's advertising, recruiting, and admissions materials will clearly and accurately represent the proposed program and the services available. The content for every new program is derived from the new program request that is sent to the Maryland Higher Education Commission and is the source of the content for every new program at Coppin. Upon full program approval, the program is advertised in the University's catalog and homepage. Additionally, other marketing will include outreach on appropriate social media platforms.

H. Adequacy of Articulation

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

Currently, there is no articulation agreement available. However, there are meetings in progress to discuss articulation with one community college in the region. Talks are currently in progress. CSU’s transfer admissions personnel will guide the academic staff at both institutions through the process.

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

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

The proposed instructors for CYSE program are the full-time and current tenure/tenure track professors listed below.

Faculty Member	Degree and Field	Status	Courses Faculty will teach	Rank
Atma Sahu	Ph.D. Mathematics, MIT Cybersecurity Cert, HARVARD AI Health Care Cert.	Full-Time	All MATH, COSC, and CYSE 101, 301, 424	Professor & Chair
Stephen Providence	Ph.D. Computer Science	Full-Time	All COSC and CYSE 424, CYSE 221	Assistant Professor
Sean Brooks	Ph.D. Mathematics	Full-Time	All MATH, CYSE Labs	Assistant Professor
Nicholas Eugene	Ph.D. Mathematics, MPS Cybersecurity	Full-Time	All MATH, CYSE (select) courses	Associate Professor
Clarence Williams	Ph.D., MS (Cybersecurity), Cyber Engineering Cert	Full-Time	All CYSE Courses	Sr. Lecturer
Two (2) New hires (Positions announced)	Ph.D. Cybersecurity	Full-Time	All CYSE Courses	Assistant Professors

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

The primary pedagogy for faculty at Coppin is the project-based active learning model. The Coppin faculty believes strongly in a highly interactive, thinking, and hands-on problem-solving experience. Each CYSE course has a course-capstone project. Instructors design and demonstrate course projects in classrooms and labs for students in each class to the maximum extent possible. Faculty members are provided support for conferences and related research presentations.

b) The Learning Management System (LMS)

Coppin has full-time instructional technology IT employees who provide Blackboard Ultra training and Quality Matters rubric-based content development assistance. New faculty are assigned an experienced faculty mentor to ensure a smooth transition to the Bb Ultra LMS environment as well as to ensure compliance with the institution's Quality Matters teaching pedagogy.

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

The CYSE program will be offered on-campus face-to-face.

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.

Parlett L. Moore Library at Coppin is a member of the Library Information Management System (LIMS) of the University System of Maryland and Affiliated Institutions (USMAI), a collaborative effort that permits state higher education institutions to share resources. LIMS provides a USMAI union online public access catalog that contains more than 1,400,000 titles. The library has five floors, two computer labs for student use/work, two smart classrooms, four study rooms, the Parren Mitchell smart conference room, and the Cab Calloway room/art gallery.

The library currently supports 750+ courses. The library currently supports the needs of students at the undergraduate, graduate, and doctoral levels. The library is fully-prepared to support the CYSE BS Degree program at Coppin.

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.

No new facilities are required for the program. The Mathematics and Computer Science department has an AI lab equipped with Mathematica software, VMWare, Python, SPSS, and many other Integrated Software Development Systems. Coppin has multimedia state-of-the-art classrooms all over the campus. The Nano-Technology and Computer Science Lab meets the potential lab-projects needs of the students. The Office of Institutional Technology provides both local and virtual support. Coppin has a new Science and Technology Building with adequate spaces for classrooms, staff and faculty offices, and laboratories for CYSE program research and teaching.

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*

Coppin provides an institutional electronic mailing system to all students, faculty, and staff. Coppin requires the use of the email system by all students and faculty in all the institution's modalities of course delivery. Coppin's students and faculty are required to use the institution's email addresses (e.g., JDoe@coppin.edu) in all University matters and communications. Coppin State University uses email capabilities in Microsoft Office 365 and Microsoft Outlook.

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

The proposed CYSE BS degree program is face-to-face. However, if needed Coppin provides a robust Learning Management Systems (LMS) known as Blackboard Ultra and is required for administration of every class. All syllabi, grades, and assignments must be entered into the LMS on a timely basis throughout the semester. All instructors are required to use Bb Ultra LMS which is supported by Coppin's Office of instructional Technology.

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.

RESOURCES & EXPENDITURES: Five years projected budget

TABLE SEVEN: RESOURCES					
Resources Categories	(Year 1)	(Year 2)	(Year 3)	(Year 4)	(Year 5)
1. Reallocated Funds	0	0	0	0	0
2. Tuition/Fee Revenue ² (c+g below)	\$322,365	\$741,976	\$3,127,468	\$6,791,669	\$14,580,244
a. #F.T Students	15	26	38	49	59
b. Annual Tuition/Fee Rate	6716	6716	6716	6716	6716
c. Annual Full Time Revenue (a x b)	\$100,740	\$174,616	\$255,208	\$329,084	\$396,244
d. # Part Time Students	5	8	18	27	40
e. Credit Hour Rate	2955	2955	2955	2955	2955
f. Annual Credit Hours	15	24	54	81	120
g. Total Part Time Revenue (d x e x f)	\$221,625	\$567,360	\$2,872,260	\$6,462,585	\$14,184,000
3. Grants, Contracts, & Other Sources	50,000	50000	100000	0	0
4. Other Sources	0	0	0	0	0
TOTAL (Add 1 - 4)	\$372,365	\$791,976	\$3,227,468	\$6,791,669	\$14,580,244

Rationale:

- i) Reallocated Funds: None
- ii) Tuition/Fee Revenue Computed for 15 students' tuition at CSU rate
- iii) Grants, Contracts & other Sources: HBCU Lawsuit and other CSU academic program budget funds
- iv) Other sources: The department will continue pursuing grants from NIST and NSF to support further development of the program.

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 EIGHT: EXPENDITURES					
Expenditure Categories	(Year 1)	(Year 2)	(Year 3)	(Year 4)	(Year 5)
1. Total Faculty Expenses (b+c below)	117000	234000	234000	351000	455000
a. # FTE	1	2	2	3	4
b. Total Salary	\$90,000	\$180,000	\$180,000	\$270,000	\$350,000
c. Total Benefits	\$27,000	\$54,000	\$54,000	\$81,000	\$105,000
2. Total Administrative Staff Expenses (b + c below)					
a. # FTE	0.5	0.5	0.5	1	1
b. Total Salary	\$28,000	\$28,000	\$28,000	\$56,000	\$56,000
c. Total Benefits	\$8,400	\$8,400	\$8,400	\$16,800	\$16,800
3. Total Support Staff Expenses (b + c below)	\$36,400	\$36,400	\$36,400	\$72,800	\$72,800
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	\$125	\$125	\$0	\$0	\$0
6. New or Renovated Space	0	0	0	0	0
7. Other Expenses	0	0	0	0	0
TOTAL (Add 1 - 7)	\$153,525	\$270,525	\$270,400	\$423,800	\$527,800

Rationale

Total Faculty Expenses: As faculty expenses are tabulated, the plan is to hire one CYSE faculty in the first year, one more in the second year, and a third in fourth year. These funds are allocated from HBCU lawsuit state funds to Coppin.

Equipment: Software for courses is available free to students or is freeware.

Library: Money has been allocated for additional materials to be added to the on-campus library.

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.

The assessment process at Coppin consists of a series of events throughout the Academic Year. Some Academic Year Assessment Events are:

- At the August/Jan Faculty Meeting Chair and Deans address faculty and discuss courses and programs assessment and student learning issues.
- Faculty submit performance plans consistent with the mission and goals of the University and department. The documents are reviewed and approved by the Academic Dean.
- Department Chairs and Academic Dean review the faculty/Environment Survey data.
- Department Chairs and Academic Dean meet monthly and address program, instructional, and other academic issues.
- A complete curriculum review for degrees occurs every two years.
- Department chair and Academic Dean meet with the faculty to review the student learning progress and discuss needed changes.
- Faculty Performance Plans are reviewed with faculty to identify issues of divergence and to adjust the plan as needed.
- Department Chairs and Academic Dean review student course evaluations from the Fall and Spring semesters.
- Department Chairs and Academic Dean meet to review the course evaluations by students to ensure the evaluations continue to meet the university's assessment needs.

In addition to these summative assessments, the Academic Dean meets with the Department Chairs other every week to review current student progress. This formative assessment allows for immediate minor changes, which increase faculty effectiveness and, ultimately, student outcomes.

The Faculty Senate meets monthly. The Faculty Senate addresses issues that impact student outcomes as those issues emerge. Additionally, the Academic Affairs Assessment Committee reviews the assessment data and provides feedback to the departments.

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.

At Coppin, the Office of Assessment, along with the Office of Institutional Research, is housed within the Office of Planning and Assessment. The unit resides within the Division of Academic Affairs and serves the entire university in building a culture of assessment that involves all stakeholders – students, faculty, staff, and administrators. By doing so, it serves students' learning and success while preparing the institution for effectively meeting the standards for accreditation set by Middle States Commission on Higher Education.

The Office of Assessment seeks to build assessment (student learning outcomes, student retention, student and faculty satisfaction) capacity at Coppin State University in order to help students succeed. The Office of assessment does this by:

- Facilitating sustainable, utilization-focused unit-level assessment and related data-based decision-making and resource allocation;
- Designing, implementing, and monitoring a unit-level assessment process that is aligned to the institutional strategic plan; and,
- Supporting the acquisition and implementation of assessment technologies.

Student Learning Outcomes

This CYSE BS degree program is designed to meet the Student's Learning Outcomes requirements of MSCHE. The University is in good standing with all its accrediting bodies.

Students will be expected to meet with a faculty advisor during their initial semester to create their academic plans of study, and then as necessary to discuss academic progress and update plans of study. Core courses will be taught by full-time, tenure-track faculty members. The program will require 122 credit hours, including 42 General Education Requirements (with 9 credits in Category 5 instead of 7 credits). All Nineteen (19) CYSE course syllabi based on "Engineering-CYHIS" (Cybersecurity Health Information systems) brand thrust are aligned with Institutional (Middle State), ACM and ABET student's learning outcomes and require a mandatory course-lab projects

Student Retention

Coppin Assessment Office maintains a comprehensive student retention program under the Vice President/Director of Assessment. The Academic Advisors in each department work with each student to create a plan to remove any barriers to success. The Academic Advisors also work with the course instructors as needed to gain additional insight that may help correct the situation. Each student also meets with their Academic Advisor each semester to evaluate their progress toward degree completion. An updated plan of action is developed for each student for their next semester's registration and each following semester through degree completion.

The Eagle Academic Center provides additional advising and instructional support services. As a new center, they will employ methods of assessing student and faculty satisfaction. Evaluations and assessments of Student and Faculty satisfaction occur every semester. Faculty members are evaluated every semester by students enrolled in their courses. Students are required to complete a course evaluation online within a specified time frame at the end of the semester for every enrolled course via Blackboard Ultra LMS. The Department Chairs and Academic Dean review the student evaluations for every course offered at Coppin. The Department Chairs and Academic Dean also review faculty satisfaction every semester. Changes are made by faculty members accordingly. This cycle is an ongoing process.

Cost-Effectiveness

The Division of Administration and Finance provides excellent technologically advanced and customer-centered services to Coppin State University students, faculty, staff, alumni, and visitors.

The Vice President of Finance and Administration monitors each academic program with the input from Vice President of Academic Affairs throughout every semester and term for its cost-effectiveness. The Department Chairs and College Dean prepare the proposed academic budget for each program for the upcoming year. Budget increases are tied to increasing enrollment, student learning and success.

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.

Coppin is a majority-minority-serving HBCU/Minority Serving Institution. Our programs attract a diverse set of students 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. Coppin will use the same methodology for the CYSE BS degree program student recruitment.

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.

This is not applicable as this program is not associated with a low-productivity program.

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.

Not applicable as the CYSE BS degree program is not a distance education program.

2. Provide assurance and any appropriate evidence that the institution complies with the CRAC guidelines, particularly as it relates to the proposed program.

Not Applicable.



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

TOPIC: Academic Program Proposal:
Frostburg State University: Bachelor of Science in Elementary Education / Special Education
Dual Certification Program

COMMITTEE: Education Policy and Student Life

DATE OF COMMITTEE MEETING: Tuesday, January 10, 2023

SUMMARY: Frostburg State University (FSU) proposes a Bachelor of Science (B.S.) in Elementary/Special Education dual certification program. Currently, there are two existing dual certification majors at FSU: 1) Early Childhood/Elementary Education and 2) Elementary/Middle School Education. The new dual certification program includes 129 credits of coursework and field experiences, focused on both general and special education at the elementary level (the additional nine credits over 120 are necessary for a program that prepares candidates for two grade bands of teacher certification). The program must also meet the approved program requirements from the Maryland State Department of Education, as well as providing evidence of meeting the Council for the Accreditation of Educator Preparation Elementary standards for beginning educators and the Council for Exceptional Children standards for special education professionals.

Additionally, the new dual certification option provides preparation in special education for elementary candidates who, upon completion, will be prepared for certification in general education for grades 1-6 and in special education for grades 1-8. The proposed major would also be desirable for new teachers and prospective employers, given documented needs for general education teachers who are highly qualified in the areas of special education as well as certified special education teachers, both at the state and national levels.

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

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

CHANCELLOR'S RECOMMENDATION: That the Education Policy and Student Life Committee recommend that the Board of Regents approve the proposal from Frostburg State University to offer the Bachelor of Science (B.S.) in Elementary Education / Special Education Dual Certification Program.

COMMITTEE RECOMMENDATION: DATE: January 10, 2023

BOARD ACTION: DATE:

SUBMITTED BY: Joann A. Boughman 301-445-1992 jboughman@usmd.edu

UNIVERSITY SYSTEM OF MARYLAND INSTITUTION PROPOSAL FOR

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

Frostburg State University

Institution Submitting Proposal

Elementary/Special Education Dual Certification

Title of Proposed Program

Bachelor of Science Degree

Award to be Offered

Fall 2023

Projected Implementation Date

080800

Proposed HEGIS Code

131001

Proposed CIP Code

College of Education

Department in which program will be located

Dr. Jodi Welsch

Department Contact

301-687-3096

Contact Phone Number

jwelsch@frostburg.edu

Contact E-Mail Address



Signature of President or Designee

12/7/22

Date



One University. A World of Experiences.

December 8, 2022

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

Dear Chancellor Perman,

Frostburg State University (FSU) proposes a Bachelor of Science in Elementary/Special Education dual certification program. Currently, there are two existing dual certification majors at FSU: 1) Early Childhood/Elementary Education and 2) Elementary/Middle School Education. The new dual certification program includes 129 credits of coursework and field experiences, focused on both general and special education at the elementary level (the additional nine credits over 120 are necessary for a program that prepares candidates for two grade bands of teacher certification). The program must also meet the approved program requirements from the Maryland State Department of Education, as well as providing evidence of meeting the Council for the Accreditation of Educator Preparation Elementary standards for beginning educators and the Council for Exceptional Children standards for special education professionals.

Additionally, the new dual certification option provides preparation in special education for elementary candidates who, upon completion, will be prepared for certification in general education for grades 1-6 and in special education for grades 1-8. The proposed major would also be desirable for new teachers and prospective employers, given documented needs for general education teachers who are highly qualified in the areas of special education as well as certified special education teachers, both at the state and national levels.

Proposal Title:	New academic program proposal		
Program Title:	Elementary/Special Education Dual Certification		
Award Level:	Bachelor of Science Degree		
CIP:	131001	HEGIS:	080800

We would appreciate your support of the proposal for the Elementary/Special Education dual certification. If you have any questions, please do not hesitate to contact me or our Assistant Vice President for Analytics, Dr. Sara-Beth Bittinger at sbittinger@frostburg.edu.

Sincerely,

Traki L. Taylor, Ph. D.
Provost and Vice President for Academic Affairs

pc: Dr. Darlene Brannigan Smith, Interim Associate Vice Chancellor for Academic Affairs, USM
Dr. Sara-Beth Bittinger, Interim Assistant Vice President for Analytics, FSU
Dr. Boyce Williams, Dean of the College of Education, FSU

**GUIDELINES FOR PROPOSING
NEW ACADEMIC DEGREE PROGRAMS, NEW STAND-ALONE CERTIFICATE PROGRAMS, AND
SUBSTANTIAL MODIFICATIONS**

Frostburg State University (FSU) proposes a Bachelor of Science in Elementary/Special Education

A. Centrality to Institutional Mission 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.

Frostburg State University (FSU) proposes a Bachelor of Science in Elementary/Special Education program to provide students the opportunity to earn dual certification in Elementary/Special Education. Currently, there are two existing dual certification majors at FSU: 1) Early Childhood/Elementary Education and 2) Elementary/Middle School Education. The new dual certification degree program includes 129 credits of course work and field experiences focused on both general and special education at the elementary level. Additionally, it provides preparation in special education for elementary candidates who upon completion will be prepared for certification in general education for grades 1-6 and in special education for grades 1-8. The proposed major would also be desirable for new teachers and prospective employers, given documented needs for both general education teachers who are highly qualified in the area of special education as well as certified special education teachers, both at state and national levels.

A major that includes Special Education also meets the mission of the University. Frostburg State University is a student-centered teaching and learning institution featuring experiential opportunities. The course work and field experiences provided in the new major reflect the intention to provide candidates with the knowledge, skills and dispositions necessary to meet the needs of diverse students in Maryland schools and classrooms.

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

An undergraduate major that includes special education also helps to meet the strategic goals of the university, the College of Education, the Department of Educational Professions, and the PreK-9 teacher education program. The University strives to develop students' acquisition and application of knowledge, providing experiences in which students can excel. The new major would continue to address the current teacher shortage, especially in the areas of Special Education, as a step to meet the needs of the region, through outreach and engagement. The proposal also addresses strategic priorities to address enrollment needs and meet workforce demands. At the college and department level, all elementary and special education coursework is aligned with the model core teaching standards for teachers from the Interstate Teacher Assessment and Support Consortium (InTASC, 2013), as evidence of effective teacher preparation. The Elementary major requirements meet the CAEP Elementary (2018) standards. The special education coursework and field experiences would address the Council for Exceptional Children's Initial Practice Based Preparation Standards for Special Educators (2020) for K-12 .

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.

The University is committed and will adequately support the implementation of the new major for the next five years and beyond. This commitment is demonstrated with the allocation of the new tenure-track position, which has been advertised to support the implementation of the program for the fall 2023. This position would be connected to the delivery of courses, supervision for field experiences and the oversight of Special Education accreditation activities. Tuition and fees will support the proposed program over the next five years as demonstrated in Section L.

Additionally, adequate institutional support for funding is demonstrated by the state investment of \$83 million in capital funding for the construction of a new Education and Health Sciences Center (EHSC) on FSU's main campus. This facility will house the proposed Bachelor of Science in Elementary/Special Education program. Groundbreaking occurred in August 2020 and the facility is slated to open in spring 2023. The EHSC will provide a high-tech learning environment for students in the proposed program.

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

Recognition by a specialized professional association is required for the program, in the form of standards-based evidence of candidate performance. The College of Education supports these activities through the allocation of funds for a program liaison, who oversees data collection, analysis and reporting. The program financial support will be provided as part of the yearly College and Department budget. Existing technical infrastructure is adequate to support the program.

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

The program implementation is long-term, with a permanent tenure-track faculty dedicated to the ongoing course and field experience offerings to ensure candidates are able to complete the degree within a reasonable time frame.

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

Frostburg's Elementary Education major currently prepares candidates for certification in grades 1-6. The proposed new dual certification major with Special Education will allow pre-service teachers to advance their knowledge of methods that will allow them to meet the needs of their students with learning differences within the general classroom and to serve as special educators within the school environment. The focus certification band for Special Education is grades 1-8.

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

Qualified special educators are necessary to ensure that all students have the right and opportunity to learn. Diverse teachers are needed to effectively teach students from all backgrounds. Many pre-service teachers have expressed the desire to strengthen their knowledge and skills in working with students who have a variety of needs. The goal of this new major is to recruit teacher candidates from under-represented groups and to prepare all new teachers to work effectively with all students in inclusive classrooms.

A brief from the Maryland Equity Project (Janulis, 2017, <https://education.umd.edu/maryland-teacher-pipeline>) identifies Special Education as a consistent high need area in education in the nation. A 2021 report from the Federal Department of Education identified a teacher shortage in Maryland for all grade levels, including at the elementary levels (<https://www.ndm.edu/sites/default/files/pdf/MD-Teacher-Shortage.pdf>). The Maryland State Department of Education (MSDE) also identifies a state-wide critical teacher shortage for Special Education teachers. The number of undergraduates enrolled in in Special Education majors in Maryland Approved

Programs (MAP) was highest in 2015 and have been steadily dropping over time. One exception is the integrated Elementary and Special Education at Towson University.

Given that Frostburg is one of eleven public institutions in the state that provides traditional undergraduate teacher education preparation, the addition of a special education major would certainly help to address teacher shortages. Currently, Maryland Approved Programs for teacher certification do not produce enough graduates to fill all teaching vacancies across the state. The 2022 Teacher Workforce Supply, Demand and Diversity study indicated that 50% of those who apply for Maryland certification are not prepared by teacher preparation programs in the state. In addition, special education across the elementary grades continues to be identified as a critical shortage area. The availability of this new major could make Frostburg State University graduates more viable and desirable hires if they wish to teach in the state.

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

A Bachelor of Science dual certification in Elementary/Special Education program is not currently offered at any historically black institution in Maryland. Frostburg State University's teacher education faculty have a history of collaboration with Coppin State University for the past several years on embedding culturally responsive practices into our current teacher education programs. There is potential future opportunity to leverage this partnership to strengthen capacity at Coppin State University.

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

The 2022 Maryland State Plan for Higher Education directs institutions of higher education to partner with government agencies to meet the needs of Maryland students. In this case, Frostburg State University's new major for dual certification in Elementary and in Special Education would help to address critical shortage area identified by MSDE. **Goal 2** of the plan (**Success:** Promote and implement practices and policies that will ensure student success) is most applicable to the proposed major, as the new program would ensure that candidates are well prepared as educators for students with diverse needs at the elementary grades. Within the area of student success, both **Priority 5** (Maintain the commitment to high-quality postsecondary education in Maryland) and **Priority 7** (Enhance the ways postsecondary education is a platform for ongoing lifelong learning) would be met by the Elementary/Special Education Dual Certification major, as the proposed major would focus on exemplary teacher preparation in a high need area, meeting rigorous standards for both Elementary and Special Education and providing a variety of experiences in classroom and therapeutic settings. Teachers are life-long learners. Graduates from the new major would be well positioned for state level certification in two areas and poised to continue their education in areas such as Special Education, Curriculum and Instruction, Literacy or Educational Leadership.

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.

Upon completion of the Maryland Approved Program at FSU, submission of the state-required performance assessment (EdTPA) and receiving passing scores on the Praxis tests for elementary and special education, graduates of the proposed major will be eligible for the Standard Professional Certificate I in Elementary (Grades 1-6) and Special Education (Grades 1-8). These new teachers can be hired to teach in the general classroom with a variety of student, as well as inclusive classrooms that would include students with IEP's and 504 plans, to provide specified accommodations. New teachers can serve as educators working in self-

contained classrooms with students who have specific learning, emotional and behavioral needs. Certified special educators also serve as case managers in public schools and can be employed by both public and private programs and therapeutic settings that serve diverse learners.

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

At the federal level, the US Bureau of Labor Statistics (<https://www.bls.gov/emp/tables/employment-by-major-industry-sector.htm>) , there has been a continued increase in the number of jobs in the education sector.

	Employment 2011	Employment 2021	Employment 2031	Change from 2011-2021	Change from 2021-2031
Educational Services	3,249.6	3,589.3	4026.5	339.7	437.2

Based on the occupational projections for elementary teachers in the state of Maryland from 2018-28, provided by Department of Labor, Licensing and Registration (<https://www.dlir.state.md.us/lmi/iandoproj/maryland.shtml>) over 4,000 new teachers for the elementary/primary grades will be needed by the year 2028. Over 500 teachers working in special education are needed during that same time period.

Occ. Code	Occupational Title	Employment		
		2018	2028	Change
25-2052	Special Education Teachers, Kindergarten and Elementary School	3,681	4,200	519
25-2021	Elementary School Teachers, Except Special Education	30,076	34,402	4,326
25-2000	Preschool, Primary, Secondary, and Special Education School Teachers	88,672	101,652	12,980
25-3099	Teachers and Instructors, All Other	10,398	11,926	1,528

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.

Frostburg State University is the only 4-year institution in the Western Maryland region. As a Maryland Approved Program, the State Department of Education recognizes the institution as qualified to prepare teachers. Currently, a decrease in enrollment in teacher education has been evident over the past few years. For the current Elementary major, during the period of 2017 - 2022, less than 20 candidates

have graduated from the Elementary Education program at Frostburg State University each year. The new major would potentially increase enrollment in undergraduate teacher education at the University.

Other programs different from this proposal include the University of Maryland Eastern Shore Special Education program that prepares teachers to work with students from first through eighth grade (1-8) and sixth through twelfth (6-12) grade, and the Coppin State program allows the graduate to teach learners with disabilities from Pre-K through eighth grade.

<u>Campus</u>	<u>Academic Year</u>	<u># program completers in Elementary Education Major</u>
Frostburg State University	2021-2022	3
	2020 - 2021	6
	2019 - 2020	3
	2018 - 2019	12
	2017 - 2018	3

2. Provide justification for the proposed program.

The table below presents the available data for undergraduate majors enrolled in Special Education programs at other Maryland institutions in the last 5 years.

<u>School:</u>	<u>Degree Level</u>	<u>Program Name</u>	<u>CIP</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>
Coppin	Bachelors	Special Education	131001	18	12	13	10	5
Towson	Bachelors	Special Education	131001	107	102	80	84	78
Towson	Bachelors	Early Childhood/Special Education	131017	87	103	115	141	143
UMD-College Park	Bachelors	Special Education	131001	54	50	46	44	29
UMD-Eastern Shore	Bachelors	Elementary/Special Education	131001	45	43	39	37	30
Hood	Bachelors	Elementary/ Special Education	131099	67	64	53	35	33

The following table shows the total number of graduates who completed a bachelor's degree program in Special Education over the past 5 years.

	<u>Program</u>	<u>CIP</u>	<u>Total Number of Special Education Graduates (2015-2019)</u>
Coppin State University	Bachelor's in special education	131001	4
Towson University	Bachelor's in special education	13001	108
Towson University	Bachelor's in early childhood/Special Education	131017	160
University of Maryland, College Park	Bachelor's in special education	131001	89
UMD – Eastern Shore	Bachelors in Elementary/Special Education	131001	22
Hood College	Bachelors in Elementary/Special Education	131099	70
Washington Adventist University	Bachelors in Elementary /Special Education	139999	44

This data confirms the demand for special education teachers will not be met at the current rate. For this reason, it is important to provide opportunities for teachers in preparation programs. Further the existing offerings in the state demonstrate a need for an elementary-level special education focus. Towson is the only one public institution in Maryland (Towson University) that is similar by dually preparing teachers for both elementary and special education certification major.

Other programs different from this proposal include the University of Maryland Eastern Shore Special Education program that prepares teachers to work with students from first through eighth grade (1-8) and sixth through twelfth (6-12) grade, and the Coppin State program allows the graduate to teach learners with disabilities from Pre-K through eighth grade.

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.

The data related to Historically Black Institutions (Coppin University and University of Maryland-Eastern Shore) and their Elementary or Special Education programs is provided above in Section D. The combined recent numbers of graduates from these two institutions do not contribute sufficiently to meet the projected state need for Special Education teachers in this area. In addition, the new major at FSU

is unique for the geographic area and would not likely compete with programs at these two HBI's, which are located some distance from the Western Maryland region.

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.

With FSU's location and demographics having a positive impact in rural areas in Western Maryland and surrounding areas, the program indicates a high likelihood that it will not have negative impacts on the uniqueness and institutional identities of HBIs.

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.

The current Elementary curriculum includes coursework and field experiences which prepare candidates for certification in the general elementary school grades (1-6). The existing Elementary Education major has been recognized by the CAEP as meeting the CAEP Elementary Standards (2018) and has contributed to the CAEP accreditation efforts of the College of Education. In order to develop content knowledge, candidates complete recommended courses within the University's General Education Program, and prerequisite courses in Education. Each candidate is also required to meet the rigorous requirements for program entry, continuation and exit involving the elementary components of the two existing dual majors that include elementary preparation, The major program of study includes foundations courses in educational psychology, content-specific courses in pedagogy, multiple courses focused on literacy education (as required by MSDE), opportunities for application during more than 120 days of supervised field experience in local schools. Candidates are expected to leave the program with the necessary knowledge, skills and dispositions for effective beginning teaching. The new major is established in order to prepare graduating educators with additional expertise in meeting the needs of diverse learners.

The proposed Elementary/ Special Education major was developed by Elementary undergraduate faculty, as well as the single master's level Special Education faculty member. The P-9 program committee, the Initial Certification Leadership Council and the Department of Educational Professions Faculty assembly also approved the proposed dual certification major. The College of Education Curriculum Committee is in support of the proposal. The focal areas and program of study for the new major has also been reviewed by the PDS Advisory Group and a focus group of special education specialists from program partner districts. The proposal was approved by the College of Education Curriculum Committee. The proposed major was approved by the University Program Advisory Group, Academic Affairs Committee, Institutional Priorities Committee and the Faculty Senate during the Fall 2022 semester.

Once University, MHEC and MSDE approvals have been completed, the program information will be added to the undergraduate academic catalog for the Fall 2023, to inform students of the program of study for both Elementary and Special Education requirements. Recruitment efforts will be planned once the program has been fully approved. A search for the required faculty member will be conducted in the Spring 2023 semester.

More than 120 credits are required for this dual certification major. The number of credits is a result of attempts to meet the requirements for the university for the General Education Program, as well as expectations from the Maryland State Department of Education, CAEP K-6 Elementary Teacher Preparation Standards (2018)

and the CEC K-12 Initial Preparation Standards (2020). These requirements and standards must be met for both elementary and special education, under both national and state accreditation requirements.

In order for candidates to meet the field experience requirements for the FSU Teacher Education programs and the state certification requirements, field placements in both special education classrooms and general elementary classrooms will be part of the major expectations. Candidates must complete required field experiences in primary (1-3), intermediate (4-5) grades and special education (1-8). Students must complete any school district requirements (application, fingerprinting, background check, drug testing, etc.) in order to qualify for an internship placement. The Office of Clinical and Field Experience, Elementary/Special Education program faculty and supervisors will work closely with partner programs to identify possible field experiences specific to special education. Candidates will have four field experiences as part of the major:

- **Apprenticeship:** During the Apprenticeship semester, candidates will be enrolled in a field experience course that will include at least 45 hours of time in a special education setting, by shadowing a special educator, observing a special education self-contained classroom, assisting in a specialized program or therapeutic setting and delivering a lesson to students with diverse needs.
- **Assistantship:** As an assistant, candidates will be assigned to a general elementary classroom and qualified mentor teacher for a period of at least 15 days. Prior to and during the field experience, the candidate will collaborate with a peer partner to design and deliver specific content lessons and a unit of study that would be appropriate for the grade level. The partners will engage in co-teaching and will share responsibilities as both lead and assisting teachers during their lessons. At least 1 teaching observation will be completed by the University Supervisor, along with other internship evaluations shared between the Mentor and Supervisor.
- **Internship I:** During Internship I, candidates will complete a long-term field experience of at least 30 days, in either an Elementary or Special Education setting. The Elementary placement would involve inclusive classrooms, which would include students with specific learning needs and identified accommodations. Within the Special Education placement, the candidate will be mentored by a special education professional and would be working in a variety for settings, including inclusive classrooms, self-contained classrooms, small group and therapeutic settings. Candidates will be able to determine their preference for either focus experience and the scheduled placement would be dependent on available placements. During this placement, candidates will design and deliver a 5-lesson unit of study and will focus on the development of classroom management skills during the field experience. Many lessons and units will be completed under the direction of the mentor teacher. At least 2 teaching observations will be completed by the University Supervisor, along with other internship evaluations shared between the Mentor and Supervisor
- **Internship II:** The final internship will consist of at least 70 days in an assigned experience, either in Elementary grades or in Special Education specific settings. The Elementary placement would involve inclusive classrooms, which would include students with specific learning needs and identified accommodations. Within the Special Education placement, the candidate will be mentored by a special education professional and would be working in a variety for settings, including inclusive classrooms, self-contained classrooms, small group and therapeutic settings. Candidates will be able to determine their preference for either focus experience and the scheduled placement would be dependent on available placements. At least 4 teaching observations will be completed by the University Supervisor, along with other internship evaluations shared between the Mentor and Supervisor. In addition, the candidate will also complete and submit for scoring an EdTPA portfolio. The EdTPA version (Elementary Literacy, Elementary Math or Special Education) will be determined by the field placement.

The current faculty who are responsible for the core courses in the Elementary Education major will continue to offer those courses. These faculty members have prior experience teaching in the elementary grades and are highly qualified in their areas of expertise, specifically in the areas of content, pedagogy, assessment practice and management at the elementary grades. All courses for special education (SPED) are new courses for undergraduates and will be offered by a faculty member with background and experience in special education within the 1-8 grade band.

The instructional workload for the Special Education courses and field supervision equates to the need for a full-time faculty member. This new faculty member will be hired to provide the expertise necessary for the major courses, field supervision, program oversight and to support general education faculty in incorporating special education content into existing courses, using the co-teaching model. The University's only special education faculty member is located in Hagerstown and currently has a full teaching load with both M.Ed core courses and master's level Special Education courses.

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

The goals of the proposed Elementary/Special Education dual major align with the following goals of the College of Education, as follows:

1. Provide candidates with the knowledge and skills and model dispositions that lead to academic excellence, service, research, and other professional activities.
2. Promote the tools needed for candidates to develop the ability to reflect and use data to make informed decisions.
3. Deliver engaging and stimulating experiences to promote professional development and lifelong learning.
4. Create supportive learning environments that promote community outreach and collaboration with community needs and future employers.
5. Recruit and retain diverse and high-quality students, faculty, staff and administrators.

InTASC and Council for Accreditation of Education Preparation (CAEP) standards for Teacher Education will also be aligned with the new major. The major will also meet the CAEP Elementary Teacher Preparation Standards (2018) and the Council for Exceptional Children's K-12 Initial Preparation Standards (2020).

CAEP Elementary Teacher Preparation Standards (2018)

Standard 1 – Understanding and Addressing Each Child's Learning Needs

Candidates use their understanding of child growth and development, individual differences, and diverse families, cultures and communities to plan and implement inclusive learning environments that provide each child with equitable access to high quality learning experiences that engage and create learning opportunities for them to meet high standards. They work collaboratively with families to gain a holistic perspective on children's strengths and needs and how to motivate their learning.

- 1a. Candidates use their understanding of how children grow, develop and learn to plan and implement developmentally appropriate and challenging learning experiences within environments that take into account the individual strengths and needs of children.
- 1b. Candidates use their understanding of individual differences and diverse families, cultures, and communities to plan and implement inclusive learning experiences and environments that build on children's strengths and address their individual needs.
- 1c. Candidates work respectfully and reciprocally with families to gain insight into each child in order to maximize his/her development, learning and motivation.

Standard 2 – Understanding and Applying Content and Curricular Knowledge For Teaching

Candidates demonstrate and apply understandings of major concepts, skills, and practices, as they interpret disciplinary curricular standards and related expectations within and across literacy, mathematics, science, and social studies.

- 2a. Candidates demonstrate and apply understandings of the elements of literacy critical for purposeful oral, print, and digital communication.
- 2b. Candidates demonstrate and apply understandings of major mathematics concepts, algorithms, procedures, applications and mathematical practices in varied contexts, and connections within and among mathematical domains.
- 2c. Candidates demonstrate and apply understandings and integration of the three dimensions of science and engineering practices, cross-cutting concepts, and major disciplinary core ideas, within the major content areas of science.
- 2d. Candidates demonstrate understandings, capabilities, and practices associated with the central concepts and tools in Civics, Economics, Geography, and History, within a framework of informed inquiry.

Standard 3 – Assessing, Planning and Designing Contexts for Learning

Candidates assess students, plan instruction and design classroom contexts for learning. Candidates use formative and summative assessment to monitor students' learning and guide instruction. Candidates plan learning activities to promote a full range of competencies for each student. They differentiate instructional materials and activities to address learners' diversity. Candidates foster engagement in learning by establishing and maintaining social norms for classrooms. They build interpersonal relationships with students that generate motivation and promote students social and emotional development.

- 3a. Candidates administer formative and summative assessments regularly to determine students' competencies and learning needs.
- 3b. Candidates use assessment results to improve instruction and monitor learning.
- 3c. Candidates plan instruction including goals, materials, learning activities and assessments.
- 3d. Candidates differentiate instructional plans to meet the needs of diverse students in the classroom.
- 3e. Candidates manage the classroom by establishing and maintaining social norms and behavioral expectations.
- 3f. Candidates explicitly support motivation and engagement in learning through diverse evidence-based practices.

Standard 4 – Supporting Each Child's Learning Using Effective Instruction

Candidates make informed decisions about instruction guided by knowledge of children and assessment of children's learning that result in the use of a variety of effective instructional practices that employ print, and digital appropriate resources. Instruction is delivered using a cohesive sequence of lessons and employing effective instructional practices. Candidates use explicit instruction and effective feedback as appropriate and use whole class discussions to support and enhance children's learning. Candidates use flexible grouping arrangements, including small group and individual instruction to support effective instruction and improved learning for every child.

- 4a. Candidates use a variety of instructional practices that support the learning of every child.
- 4b. Candidates teach a cohesive sequence of lessons to ensure sequential and appropriate learning opportunities for each child.
- 4c. Candidates explicitly teach concepts, strategies, and skills, as appropriate, to guide learners as they think about and learn academic content.

- 4d. Candidates provide constructive feedback to guide children’s learning, increase motivation, and improve student engagement.
- 4e. Candidates lead whole class discussions to investigate specific content, strategies, or skills, and ensure the equitable participation of every child in the classroom.
- 4f. Candidates effectively organize and manage small group instruction to provide more focused, intensive instruction and differentiate teaching to meet the learning needs of each child.
- 4g. Candidates effectively organize and manage individual instruction to provide targeted, focused, intensive instruction that improves or enhances each child’s learning.

Developing As a Professional

Candidates promote learning and development of every child through participation in collaborative learning environments, reflective self-study and professional learning, and involvement in their professional community.

- 5a. Candidates work collaboratively with colleagues, mentors, and other school personnel to work toward common goals that directly influence every learner’s development and growth.
- 5b. Candidates design and implement professional learning activities based on ongoing analysis of student learning; self-reflection; professional standards, research and contemporary practices; and standards of ethical professional practice.
- 5c. Candidates participate in peer and professional learning communities to enhance student learning.

Council for Exceptional Children Initial Practice-Based Professional Preparation Standards for Special Educators (Initial K-12 Standards, 2020)

Standard 1: Engaging in Professional Learning and Practice within Ethical Guidelines

Candidates practice within ethical and legal guidelines; advocate for improved outcomes for individuals with exceptionalities and their families while considering their social, cultural, and linguistic diversity; and engage in ongoing self-reflection to design and implement professional learning activities.

Component 1.1: Candidates practice within ethical guidelines and legal policies and procedures.

Component 1.2: Candidates advocate for improved outcomes for individuals with exceptionalities and their families while addressing the unique needs of those with diverse social, cultural, and linguistic backgrounds.

Component 1.3: Candidates design and implement professional learning activities based on ongoing analysis of student learning; self-reflection; and professional standards, research, and contemporary practices.

Standard 2: Understanding and Addressing Each Individual’s Developmental and Learning Needs

Candidates use their understanding of human growth and development, the multiple influences on development, individual differences, diversity, including exceptionalities, and families and communities to plan and implement inclusive learning environments and experiences that provide individuals with exceptionalities high quality learning experiences reflective of each individual’s strengths and needs.

Component 2.1: Candidates apply understanding of human growth and development to create developmentally appropriate and meaningful learning experiences that address individualized strengths and needs of students with exceptionalities.

Component 2.2: Candidates use their knowledge and understanding of diverse factors that influence development and learning, including differences related to families, languages, cultures, and communities, and individual differences, including exceptionalities, to plan and implement learning experiences and environments.

Standard 3: Demonstrating Subject Matter Content and Specialized Curricular Knowledge

Candidates apply their understanding of the academic subject matter content of the general curriculum and specialized curricula to inform their programmatic and instructional decisions for learners with exceptionalities.

Component 3.1: Candidates apply their understanding of academic subject matter content of the general curriculum to inform their programmatic and instructional decisions for individuals with exceptionalities.

Component 3.2: Candidates augment the general education curriculum to address skills and strategies that students with disabilities need to access the core curriculum and function successfully within a variety of contexts as well as the continuum of placement options to assure specially designed instruction is developed and implemented to achieve mastery of curricular standards and individualized goals and objectives.

Standard 4: Using Assessment to Understand the Learner and the Learning Environment for Data-based Decision Making

Candidates assess students' learning, behavior, and the classroom environment in order to evaluate and support classroom and school-based problem-solving systems of intervention and instruction. Candidates evaluate students to determine their strengths and needs, contribute to students' eligibility determination, communicate students' progress, inform short and long-term instructional planning, and make ongoing adjustments to instruction using technology as appropriate.

Component 4.1: Candidates collaboratively develop, select, administer, analyze, and interpret multiple measures of student learning, behavior, and the classroom environment to evaluate and support classroom and school-based systems of intervention for students with and without exceptionalities.

Component 4.2: Candidates develop, select, administer, and interpret multiple, formal and informal, culturally and linguistically appropriate measures and procedures that are valid and reliable to contribute to eligibility determination for special education services.

Component 4.3: Candidates assess, collaboratively analyze, interpret, and communicate students' progress toward measurable outcomes using technology as appropriate, to inform both short- and long-term planning, and make ongoing adjustments to instruction.

Standard 5: Supporting Learning Using Effective Instruction

Candidates use knowledge of individuals' development, learning needs, and assessment data to inform decisions about effective instruction. Candidates use explicit instructional strategies and employ strategies to promote active engagement and increased motivation to individualize instruction to support each individual. Candidates use whole group instruction, flexible grouping, small group instruction, and individual instruction. Candidates teach individuals to use meta-/cognitive strategies to support and self-regulate learning.

Component 5.1: Candidates use findings from multiple assessments, including student self-assessment, that are responsive to cultural and linguistic diversity and specialized as needed, to identify what students know and are able to do. They then interpret the assessment data to appropriately plan and guide instruction to meet rigorous academic and non-academic content and goals for each individual.

Component 5.2: Candidates use effective strategies to promote active student engagement, increase student motivation, increase opportunities to respond, and enhance self-regulation of student learning.

Component 5.3: Candidates use explicit, systematic instruction to teach content, strategies, and skills to make clear what a learner needs to do or think about while learning.

Component 5.4: Candidates use flexible grouping to support the use of instruction that is adapted to meet the needs of each individual and group.

Component 5.5: Candidates organize and manage focused, intensive small group instruction to meet the learning needs of each individual.

Component 5.6: Candidates plan and deliver specialized, individualized instruction that is used to meet the learning needs of each individual.

Standard 6: Supporting Social, Emotional, and Behavioral Growth

Candidates create and contribute to safe, respectful, and productive learning environments for individuals with exceptionalities through the use of effective routines and procedures and use a range of preventive and responsive practices to support social, emotional and educational well-being. They follow ethical and legal guidelines and work collaboratively with families and other professionals to conduct behavioral assessments for intervention and program development.

Component 6.1: Candidates use effective routines and procedures to create safe, caring, respectful, and productive learning environments for individuals with exceptionalities.

Component 6.2: Candidates use a range of preventive and responsive practices documented as effective to support individuals' social, emotional, and educational well-being.

Component 6.3: Candidates systematically use data from a variety of sources to identify the purpose or function served by problem behavior to plan, implement, and evaluate behavioral interventions and social skills programs, including generalization to other environments.

Standard 7: Collaborating with Team Members

Candidates apply team processes and communication strategies to collaborate in a culturally responsive manner with families, paraprofessionals, and other professionals within the school, other educational settings, and the community to plan programs and access services for individuals with exceptionalities and their families.

Component 7.1: Candidates utilize communication, group facilitation, and problem-solving strategies in a culturally responsive manner to lead effective meetings and share expertise and knowledge to build team capacity and jointly address students' instructional and behavioral needs.

Component 7.2: Candidates collaborate, communicate, and coordinate with families, paraprofessionals, and other professionals within the educational setting to assess, plan, and implement effective programs and services that promote progress toward measurable outcomes for individuals with and without exceptionalities and their families.

Component 7.3: Candidates collaborate, communicate, and coordinate with professionals and agencies within the community to identify and access services, resources, and supports to meet the identified needs of individuals with exceptionalities and their families.

Component 7.4: Candidates work with and mentor paraprofessionals in the paraprofessionals' role of supporting the education of individuals with exceptionalities and their families.

3. Explain how the institution will:

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

Accreditation is required in order for our graduating candidates to be eligible for certification by the State of Maryland. Analysis of program data will be part of the existing College of Education's Quality Assurance System, with attention to continuous improvement in meeting the CEC Initial Preparation Standards K-12 and CAEP Elementary Teacher standards. If candidates have met the learning outcomes for the program, they will be eligible for certification in the State of Maryland. The major will also be approved by MSDE, to be recognized as a Maryland Approved Program.

Candidates must complete the approved program requirements as listed in the catalog and meet university graduation requirements. Specific gatekeeping requirements ensure that candidate's performance is monitored during their degree progress. Candidates must successfully complete courses and field experiences, as well as achieve acceptable performance on internal program assessments, in order to progress to the following semester. These course and field-based assessments include Intern Performance Ratings, Dispositions Evaluations, Instructional Unit assessments, as well as other assessments related to planning, instruction and assessment in both Elementary and Special Education outcomes. Entrance and Exit Interviews around internship experiences must be passed. Once a candidate completes all program exit requirements, they will be eligible for graduation and recommended for certification by the State of Maryland. The degree and program requirements for the Elementary/Special Education major are listed below.

PreK-9 Teacher Education Programs at Frostburg State University

The Educational Professions Department offers three elementary education majors: Early Childhood/Elementary major leading to eligibility for certification in PreK through grade 6, Elementary for certification in grades 1-6, **Elementary/Special Education for grades 1-6 and special education 1-8** and Elementary/Middle for certification in grades 1-9.

Eligibility for Teacher Certification in Maryland

For eligibility for teacher certification, candidates must complete the approved program requirements, university graduation requirements and state-required assessments demonstrating the knowledge and skills of a specialized content area according to the requirements of the Maryland State Department of Education. Candidates must demonstrate the knowledge and skills required by the Maryland State Department of Education in order to gain certification.

Candidates may apply for a certificate of eligibility directly to the Maryland State Department of Education or the personnel office of a county offering employment.

Approved Program

Since CAEP (Council for the Accreditation of Educator Preparation) nationally recognizes FSU's teacher education programs and the Maryland State Department of Education has approved FSU's teacher education programs, the Department of Educational Professions authorizes the Registrar's Office to affix an approved program stamp on official transcripts upon satisfactory completion of all requirements.

Special Admission Criteria

In addition to the requirements set forth in the summaries of requirements for majors in Early Childhood/Elementary, Elementary, **Elementary/Special Education**, Elementary/Middle, applicants must meet admission requirements in order to be accepted into and complete each phase of the education program.

Accreditation

Teacher Education Programs are approved by the State of Maryland under the Redesign for Teacher Education. Colleges, schools and departments of education are accredited by the Council for the Accreditation of Educator Preparation (CAEP). Individual education programs are recognized by professional content area associations which offer national recognition for being compliant with national standards.

Program Entrance Requirements

1. Completion of at least 45 credit hours.
2. Cumulative GPA of at least 2.5 (including all grades from transfer institutions).
3. Meeting basic skills requirements set by the Maryland State Department of Education through qualifying scores on PRAXIS CORE, SAT, ACT or having a cumulative GPA of 3.0 including all grades from transfer institutions.
4. Grade of C or better (or P) in all required Professional Education Sequence courses, including transfer equivalents, designated by program.
5. Grade of C or above in ENGL 101/111 or equivalent and Math Core Skills course.
6. Grade of C or above in MATH 206 or 207 or transfer equivalent
7. Positive recommendation of advisor.
8. Twenty (20) documented hours of working with diverse populations.
9. Declaration of a major.
10. Declaration of a specialization or concentration
11. Negative result on current TB test.
12. Completion of Consent and Release form.
13. Fingerprinting as a background check is required. For more information, contact the Office of Clinical and Field Experiences.

Assistantship Admission Requirements

1. Cumulative FSU GPA of at least 2.5.
2. Cumulative GPA of at least 2.5 in the Professional Education Sequence, designated by program.
3. Grade of C or better (or P) in all required Professional Education Sequence courses, including transfer equivalents, designated by program.
4. Grade of C or better in ENGL 308 or equivalent.
5. Positive recommendation of advisor.
6. Seventy-five percent or 18 credits of specialization or concentration completed.
7. Grade of C or better in MATH 206 and MATH 207 or transfer equivalents.
8. Acceptable rating on professional dispositions evaluation.

Internship I Admission Requirements

1. Successful completion of field work courses.
2. Cumulative FSU GPA of at least 2.5.
3. GPA of at least 2.5 in Assistantship courses
4. Grade of C or better (or P) in all required Professional Education Sequence courses, including transfer equivalents, designated by program.
5. Grade of C or better in ENGL 308 or equivalent (Sec/P-12 only).
6. Grade of C or better in MUSC 350 or EDUC 333 and HPED 309 (P-9 only).
7. Successful completion of an entrance interview/conference.

8. Acceptable rating on professional dispositions evaluation.

Internship II Admission Requirements

1. Cumulative FSU GPA of at least 2.60.
2. Cumulative GPA of at least 2.75 in the Professional Education Sequence, designated by program.
3. GPA of at least 2.75 in content major or area of specialization/concentration.
4. Grade of C or better (or P) in all required Professional Education Sequence courses, including transfer equivalents, designated by program.
5. Passing score on Early Childhood Comprehensive Exam (EC/Elem only).
6. Successful completion of Internship I.
7. Negative result on current TB test.
8. Positive recommendation of advisor and approval of program coordinator.
9. Verification of completion of or registration for content knowledge and pedagogy assessments required by the Maryland State Department of Education.
10. Acceptable rating on professional dispositions evaluation.

Program Exit Requirements

1. Submission of a Teacher Performance Assessment that meets institutional standards
2. Successful completion of an exit interview that meets institutional standards.
3. Completion of the PRAXIS II content knowledge and pedagogy assessments required by the Maryland State Department of Education.
4. Successful completion of Internship II field work and seminar.

External assessments are used to verify candidate's preparation and fitness for teacher certification. In order to be eligible for certification in grades 1-6, graduates must also meet the score requirements on the Praxis subject tests, as determined by the Maryland State Department of Education, including the Elementary Education: Content Knowledge for Teaching (7811), the Teaching Reading: Elementary Education (5205) and submit scores for EdTPA. In the area of Special Education for grades 1-8, candidates must complete the Special Education Core Knowledge and Applications (5354). These assessments are required for candidates to become FSU program completers and to graduate from the approved teacher education program. Candidates will apply for a certificate of eligibility directly to the Maryland State Department of Education or may apply for a Standard Professional Certificate I through the personnel office of a county offering employment.

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

As a dual certification major, the proposed major requires a 24-hour Special Education specialization, with at least 6 additional credits in a Special Education field experience. The descriptions of the new required courses within the Special Education specialization are provided below. The proposed new major has been designed to allow candidates to ensure appropriate time toward degree completion. The major requirements can be completed within 8 semesters, with a course load of 15-17 credits per semester.

See Appendix A: Elementary/Special Education Dual Certification Major Courses Course Title, Credits and Description

Course Title, Credits and Description

Elementary/Special Education Dual Certification Major

Requirements for Major

Completion of GEP (38 - 41 hours)

a. Core Skills (9)

i. ENGL 101/111 (3)

Description: Addresses the processes of composition and develops intermediate skills in writing essays with an argumentative edge. Based on readings for diverse audiences, prepares students for writing documented essays. Every semester. Students may not withdraw unless withdrawing from the University. Core Skill 1.

ii. MATH 109/110 (3)

Description: For the non-math major; less rigorous than MATH 380. Elementary probability theory; collection, organization and analysis of data; descriptive statistics; the normal and binominal distributions; introduction to inferential statistics; and applications. Every semester. Prerequisite: a passing score on the Mathematics Placement test administered by the University or DVMT 095. MAY NOT BE USED TO SATISFY THE REQUIREMENTS FOR A MAJOR OR MINOR IN MATHEMATICS. MAY BE USED TO FULFILL CORE SKILL 3.

OR MATH 119 (3)

Description: Functions and their graphs, inverse functions, solutions of equations and inequalities, polynomial and rational functions, exponential and logarithmic functions, systems of equations and matrices. Every semester. Prerequisite: A passing score on the Mathematics Placement Test administered by the University or a grade of B or better in DVMT 100. MAY NOT BE USED TO SATISFY THE REQUIREMENTS FOR A MAJOR OR MINOR IN MATHEMATICS. MAY BE USED TO FULFILL CORE SKILL 3.

iii. Advanced Writing course (3) - ENGL 308/309/310/312/300/330/338/339

Description: Development of advanced skills in writing based on reading for social science audiences. Preparation of extended papers; attention to research tools and documentation. Students may receive credit for only one of the following: 308, 309, 310 or 312. Every semester. Prerequisites: C or better in ENGL 101 or 111; and at least 42 credits or permission of Chair. Core Skill 2

b. **Modes of Inquiry (29-32) including two 4-credit natural science courses. The following courses are recommended within the GEP.**

i. ART 110 Visual Imagery (3)

Description: An introduction to the visual arts through theory and practice; exploring basic aesthetic concepts, modes of visual communication, expressive meaning of various materials, theoretical components and symbol systems. Admission priority for Early Childhood and Elementary Education majors. Every semester. GEP Group A.

ii. HIST 100/111 The Contemporary World Historical Perspective (3)

Description: A consideration of major historical developments of the last century in diverse areas of the world that illuminate contemporary problems. Every semester. GEP Group B or F.

iii. ENGL 150/250 Introduction to Literature (3)

Description: A thematic study of literature, looking across genres and cultures at contemporary topics. Continued development of writing skills. Every semester. GEP Group B.

iv. BIOL 109 Human Biology and the Environment (4)

Description: Study of the human species with emphasis on the interdependence of humans, other forms of life, and the physical environment. Three hrs. lecture, 2 hrs. lab. Not for majors or minors. Every semester. GEP Group C.

v. PHSC 203 Physical Science(4)

Description: Physical phenomena and their role in modern society: basic concepts of physics, chemistry, and astronomy, with energy and environment as the unifying theme. Three hrs. lecture and 3 hrs. lab. Every semester. Intended for education majors. GEP Group C.

vi. SOCI 100/111 Introduction to Sociology (3)

Description: Systematic introduction to the study of society. Basic concepts, methods of study, and theories about societal structures and processes. Every semester. Not open to students who have credit for former SOCI 201. GEP Group D.

vii. PSYC 150/151 Introduction to Psychology (3)

Description: Introduction to the methodology, theories, and applications of the science of animal and human behavior. Every semester. GEP Group D.

viii. IDIS 150 First Year FSU Colloquium

Description: Fostering a Sense of Understanding through exploration of a current issue, theme, problem, person or persons, cultural or historical period, world area or national region, or other unifying principle through interdisciplinary study, discussion, and activities. Every semester. To be completed within first 45 hours or soon after transfer is applicable. GEP Group E.

ix. GEOG 104/114 Human Geography (3)

Description: Earth-sun relations, map reading and interpretations, landforms, elements of weather and climate, and climate regions. Three hrs. lecture and 2 hrs. lab. Every semester. GEP Group C.

Additional Required Courses for Elementary Majors (16 hours)

1. MATH 206 Problem solving for Elementary Teachers I (3)

Description: Heuristics of problem solving, set theory, functions, estimation, measurement, numeration systems, rational numbers and elementary number theory. Emphasis on students constructing and expanding their mathematical knowledge using modern technologies and pedagogies to investigate questions and solve problems. Learning activities include collecting and analyzing data from simple experiments, identifying mathematical models for the data and using these models to make predictions which can then be tested. Admission priority will be given to Early Childhood Education and Elementary Education majors. Every semester. Prerequisite: a grade of C or better in either MATH 102/119 or MATH 109/209. **MAY NOT BE USED TO SATISFY THE REQUIREMENTS FOR A MAJOR OR MINOR IN MATHEMATICS.**

2. MATH 207 Problem solving for Elementary Teachers II (3)

Description: A continuation of MATH 206. Basic concepts of geometry, including measurement ideas, probability and statistics. Technological tools such as spreadsheets, geometric software and statistical packages will be used. Admission priority will be given to Early Childhood Education or Elementary Education majors. Every semester. Prerequisite: C or better in MATH 206. **MAY NOT BE USED TO SATISFY THE REQUIREMENTS FOR A MAJOR OR MINOR IN MATHEMATICS.**

3. 4 credit laboratory science elective (4) – GEOG 103/113 Physical Geography (recommended)

Description: Earth-sun relations, map reading and interpretations, landforms, elements of weather and climate, and climate regions. Three hrs. lecture and 2 hrs. lab. Every semester. GEP Group C.

4. MUSC 350 Music and Creative Interaction for the Elementary Classroom (3)

Description: Classroom use of music skills for children from pre-school through sixth grade. Emphasizes the elements and skills of music and provides opportunity to develop and apply teaching strategies to the teaching of music through moving, singing, listening, playing, reading, creating and creative interaction. Designed for the elementary education major. Every semester. Prerequisite: sophomore standing.

OR EDUC 333 Integrated Arts in the Elementary Classroom (3)

Description: Integrated Arts in the Elementary Classroom is designed to prepare candidates to integrate the arts into learning experiences in the elementary classroom. The course includes current theory in arts integration; background information on the elements of the creative arts; experiences with visual art, music and movement, creative writing, children's literature, creative dramatics and puppetry; and planning arts-enhanced lessons appropriate for grades 1-6. Arts integration will be related to multicultural learning, differentiation for student learning, including gifted education, and educational technology. Every semester. Prerequisite: EDUC 100 or permission of instructor.

5. HPED 309 Wellness and the Whole Child (3)

Description: Principles and practices of educating the whole child within the Whole School, Whole Community, Whole Child (WSCC) Model. Emphasis on skills-based health education at the elementary school level. Topics include social-emotional learning (SEL), infusing movement into Common Core lessons, school wellness policies, and teaching sensitive topics. Every semester, summer.

Requirements for Special Education Specialization (24 hours)

1. Required Courses (6 credits)

- a. PSYC 150 General Psychology (GEP)

Description: Introduction to the methodology, theories, and applications of the science of animal and human behavior. Every semester. GEP Group D

- b. PSYC 210 Child Development

Description: Detailed review of the biological, cognitive, and socio-emotional aspects of development, from conception through childhood. More depth than PSYC 208. Every semester. Prerequisite: PSYC 150/151 with a "C" or better.

OR PSYC 208 Lifespan Development

Description: Survey of human development from conception to death, emphasizing biological, cognitive, and socio-emotional development. An overview for understanding how humans change across the lifespan. Less depth than PSYC 210 or PSYC 212. Variable. Prerequisite: PSYC 150/151 with a "C" or better.

2. Required Advanced Courses (9 credits)

- a. EDUC 376 Special and Multicultural Education

Description: Acquaints students with historical and legislative basis of special education in public schools. Characteristics of exceptional children, including social emotional, sensory, behavioral, physical, cognitive, and language. Understanding of eligibility determination as well as specifically designed instruction needed for equitable access of the curriculum. Understanding the influence of culture on learning and instruction. Every semester. Prerequisite: Admission to Apprenticeship.

3. Required Courses in Special Education (12 credits)

- a. SPED 205 Supporting Students with Diverse Needs (3)

Description: Develop knowledge, skills, and dispositions to support diverse learners with academic and social emotional needs in the classroom. Identify evidence-based practices focus on identification strategies, functional behavior assessments, positive behavior supports,

behavior intervention plans, academic interventions, self-regulation strategies, management of the classroom environment, and social emotional learning supports. Review relevant theories and research on supporting positive behavior change for students exhibiting challenging behaviors. Required for Elementary/Special Education. Variable. Prerequisite: EDUC 100.

b. SPED 390 Field Experience in Special Education (3 credits; taken during Apprenticeship)

Description: Supervised field experiences for Elementary/Special Education candidates in inclusive classroom settings grade 1 through 8, as well as specialized settings and programs. Develop knowledge skills, and dispositions of age-appropriate environments. Includes analyses of children's needs. Enable candidates to plan classroom environments which provide access to the curriculum, participation in classroom instruction, and support for all children in the classroom. Includes some class work. Required for Elementary/Special Education, Special Education specialization candidates only. Graded P/F. Variable. Prerequisite: Admission to Apprenticeship.

c. SPED 305 Assessment and Evaluation in the Inclusion Classroom (3; taken during Assistantship)

Description: Overview of basic concepts, ethical concerns, legal issues, and typical procedures related to the assessment and monitoring of exceptional individuals. Develop skills in the use of appropriate assessment instrument. Identify strategies that consider the influence of diversity on assessment practices and inclusion of students with exceptional learning needs. Required for Elementary/Special Education, Special Education specialization candidates only. Variable. Prerequisite: Admission to Assistantship; concurrent enrollment in Assistantship courses

d. SPED 405 Instructional-Strategies for Students with Learning Differences (3; taken during Internship I)

Description: Identify educational needs of exceptional children related to preventive and remedial education. Focus on appropriate strategies for four types of students with special needs: student with disabilities, gifted and talented learners, culturally and linguistically diverse individuals, and students at risk for school failure. Prepare candidates for the role as an instructional leader in the areas of inclusion, advocacy, and collaboration. Required for Elementary/Special Education, Special Education specialization candidates only. Variable. Prerequisite: Admission to Internship I; concurrent enrollment in Internship I courses.

e. SPED 415 Collaborative Problem Solving and Application through Evidence Based Practices (3; taken during Internship II)

Description: A problem-solving professional learning approach to explore high leverage practices in Special Education including behavioral interventions, family engagement, and specially designed instruction for the diverse learner. This course offers a forum to explore current and critical topics in order to collaboratively problem solve to meet the individualized education plan. Required for Elementary/Special Education, Special Education specialization candidates only. Variable. Prerequisite: Admission to Internship II; concurrent enrollment in Internship II courses.

Professional Education Sequence (56 hours) See admission requirements

1. Pre-Entrance (10 credits)

a. EDUC 100 Introduction to Teacher Education (1)

Description: Analysis of education in America and the potential roles to be played both in schools and in the wider community. A preliminary self-assessment of how the students' interests and abilities match the demands of the educational profession. Observations with reflections. Every semester. Required: taken prior to admission to Apprenticeship. Recommended: taken within first 2 semesters at Frostburg State University.

b. EDUC 201 Students, Teachers and Learning Environments (3)

Description: A study of students, teachers and learning environments, including the philosophical and historical foundations of the American educational system. Basis for further study in education, including topics on legal and ethical issues and diversity. Every semester. Prerequisite: EDUC 100. May be taken Pre-entrance or concurrently with Apprenticeship

c. EDUC 202 Foundations of Learning and Instruction (3)

Description: The learning and teaching process in the American educational system. Human growth and development of students birth-21, learning theories and styles, instructional strategies and adaptations. Controlled observations in educational settings. Every semester. May be taken Pre-entrance or concurrently with Apprenticeship. Recommended to be taken after EDUC 201.

d. EDUC 325 Educational Technology (3)

Description: Provides opportunities for experiences and practice in using technology tools for educators. Emphasis on the use of technology within the context of accomplishing authentic tasks. Every semester. Must be completed prior to Internship I. Prerequisite: completion of at least 12 credit hours. Tech. fluency.

2. Apprenticeship (7 hours)

a. EDUC 200 Teaching and Professional Assessment Laboratory (1)

Description: Through a series of live or video-recorded teaching sessions, students acquire skill in assessing their own strengths and weaknesses as teachers. Students will write instructional objectives, prepare lesson plans and teach a series of 10-minute lessons to their peers. Includes screening for selected teaching proficiencies. This course is required in all teacher education programs. Graded P/F. Every semester. Prerequisite: admission to Apprenticeship.

b. EDUC 376 Special and Multicultural Education (3)

Description: Acquaints students with historical and legislative basis of special education in public schools. Characteristics of exceptional children, including social emotional, sensory, behavioral, physical, cognitive, and language. Understanding of eligibility determination as well as specifically designed instruction needed for equitable access of the curriculum. Understanding the influence of culture on learning and instruction. Every semester. Prerequisite: Admission to Apprenticeship.

c. REED 323 Process and Acquisition of Reading (3)

Description: Process of language development, including impact of phonemic awareness, and how the brain responds to reading acquisition. Practical applications of research in language development, acquisition and use. Understanding of the role of experiential background, prior knowledge, motivation and personal significance to emerging readers. Every semester. Prerequisite: Admission to program.

3. Assistantship (14 hours; completed over 1 semester)

a. ELED 307 Teaching Assistantship (1)

Description: Supervised assisting at the early childhood, elementary and middle school levels. Joint supervision by school system and university personnel. Daily, full-day field clinical experience. Graded P/N. May only be repeated once, upon approval of the program coordinator. Every semester. Prerequisite: Admission to Assistantship; concurrent enrollment in Assistantship courses.

b. EDUC 401 Assistantship Seminar (1)

Description: Analysis of planning, instruction and assessment components of effective teaching at the assistantship level. Management strategies for student behavior, curriculum, material selection and resources. Reflective self and peer evaluation of teaching performance in the classroom. Every semester. Prerequisites: Admission to Apprenticeship and concurrent enrollment in ELED 307.

c. ELED 471 Math Curriculum, Methods & Assessment (3)

Description: Planning, constructing and organizing curriculum; types of curricula. Methods, materials, content and assessment for teaching P-8 mathematics. Every semester. Prerequisite: Admission to Assistantship; concurrent enrollment in Assistantship courses.

d. ELED 474 Science Curriculum, Methods & Assessment (3)

Description: Planning, constructing, and organizing curriculum; types of curricula. Methods, materials, content and assessment for teaching P-9 science. Every semester. Prerequisite: Admission to Assistantship; concurrent enrollment in Assistantship courses.

e. ELED 475 Social Studies Curriculum, Methods & Assessment (3)

Description: Planning, constructing and organizing curriculum; types of curricula. Methods, materials, content and assessment for teaching P-9 social studies. Every semester. Prerequisite: Admission to Assistantship; concurrent enrollment in Assistantship courses.

f. REED 473 Reading Instruction (3)

Description: Knowledge of best practices and instructional strategies that focus on the purposes for reading. How to use a balanced program of phonics, semantics and syntactics in teaching reading. Methods, materials and content for teaching reading in grades P-9. Knowledge of early identification and intervention strategies for low-achieving readers. Every semester. Prerequisite: Admission to Assistantship; concurrent enrollment in Assistantship courses.

4. Internship I (13 hours; completed over 1 semester)

a. EDUC 402 Internship I Seminar (1)

Description: Analysis of planning, instruction and assessment components of effective teaching at the Internship I level. Management strategies for student behavior, curriculum, materials selection and resources. Reflective self and peer evaluation of teaching performance in the classroom. Every semester. Prerequisites: Admission to Internship I and concurrent enrollment in ELED 494.

b. ELED 494 Teaching Internship I: P-9 (6)

Description: Supervised practicum at the early childhood, elementary and middle school levels. Joint supervision by school system and university personnel. Daily, full-day clinical experience. When taken during the fall semester, includes a multiple-day, beginning-of-school experience. Graded P/N/F. May only be repeated once, upon approval of the program coordinator. Every semester. Prerequisite: Admission to Internship I; concurrent enrollment in Internship I courses

c. REED 420 Assessment for Reading Instruction (3)

Description: Understanding of the use of national, state, local and classroom reading assessment data to make ongoing instructional modifications as a strategy for prevention and intervention. Understanding of a variety of reading assessments and curriculum adjustments. Communicating assessment data about individual student reading performance to appropriate sources. Every semester. Prerequisite: Admission to Internship I, concurrent enrollment in Internship I courses.

d. REED 425 Materials and Motivations for Reading (3)

Description: Support for long-term motivation of developing readers within a framework of inquiry. Experience a variety of texts, including fiction and nonfiction, to be used in the classroom. Apply strategies for selecting materials, retrieving and evaluating materials. Understanding of accessibility, variety of media, multicultural materials, text features and oral and written responses to literature. Knowledge of the role of parents in supporting reading programs. Every semester. Prerequisite: Admission to Internship I, concurrent enrollment in Internship I courses.

5. Internship II (12 hours; completed over 1 semester)

a. EDUC 422 Leadership Seminar P-9 (3)

Description: Development of educational leaders in the classroom, school, community, and profession. Elements of developmentally appropriate planning, instruction, assessment and classroom management and the collection of evidence of candidate's practices in the final internship. Management strategies for student behavior, curriculum, material and resources. Professional preparation, critical reflection and advocacy emphasized. Every semester. Prerequisite: Admission to Internship II. Capstone.

b. ELED 495 Teaching Internship II: P-9 (9) (Capstone)

Description: Supervised practicum at the early childhood, elementary and middle school levels. Joint supervision by school system and university personnel. Daily, full day clinical experience. When taken during the fall semester, includes a multiple day beginning of school experience. Graded P/N/F. May only be repeated once, upon approval of the program coordinator. Every semester. Prerequisite: Admission to Internship II and concurrent enrollment with EDUC 422. Capstone.

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

Candidates are expected to meet all University requirements for the General Education Program and many of these courses are also applied to meet the Elementary requirements. In the Special Education specialization, one GEP course, PSYC 150: Introduction to Psychology, is included in the program of study.

Elementary/Special Education Dual Certification Major Requirements for Major

2. Completion of GEP (38 - 41 hours)

a. Core Skills (9)

i. ENGL 101/111 (3)

ii. MATH 109/110 (3) or MATH 119 (3)

iii. Advanced Writing course (3) - ENGL 308/309/310/312/300/330/338/339

- b. Modes of Inquiry (29-32) including two 4-credit natural science courses. The following courses are recommended within the GEP.
 - i. ART 110 Visual Imagery (3)
 - ii. HIST 100/111 The Contemporary World Historical Perspective (3)
 - iii. ENGL 150/250 Introduction to Literature (3) **OR** ENGL 221 Intro to Literature/Intermediate Composition (3)
 - iv. BIOL 109 Human Biology and the Environment (4) **OR** BIOL 149/159 General Biology I (4)
 - v. PHSC 203 Physical Science(4) **OR** PHYS 215 General Physics (4) **OR** PHYS 261 Principles of Physics I (4)
 - vi. SOCI 100/111 Introduction to Sociology (3)
 - vii. PSYC 150/151 Introduction to Psychology (3)
 - viii. IDIS 150 First Year FSU Colloquium
 - ix. GEOG 104/114 Human Geography (3) **OR** GEOG 110 World Regional Geography (3) **OR** SOCI 305 Racial and Cultural Minorities (3) **OR** INST 150 Introduction to World Religions (3)

Additional Required Courses for Elementary Majors (16 hours)

- 6. MATH 206 Problem solving for Elementary Teachers I (3)
- 7. MATH 207 Problem solving for Elementary Teachers II (3)
- 8. 4 credit laboratory science elective (4) – GEOG 103/113 Physical Geography (recommended)
- 9. MUSC 350 Music and Creative Interaction for the Elementary Classroom (3) **OR** EDUC 333 Integrated Arts in the Elementary Classroom (3)
- 10. PHEC 309 Health and Physical Education for the Elementary Classroom (3)

Requirements for Special Education Specialization (24 hours)

- 4. **Required Courses (6 credits)**
 - a. PSYC 150 General Psychology (*GEP*)
 - b. PSYC 210 Child Development **OR** PSYC 208 Lifespan Development
- 5. **Required Advanced Courses (9 credits)**
 - a. EDUC 376 Special and Multicultural Education
- 6. **Required Courses in Special Education (12 credits)**
 - a. SPED 205 Supporting Students with Diverse Needs (3)
 - b. SPED 390 Field Experience in Special Education (3 credits; taken during *Apprenticeship*)
 - c. SPED 305 Assessment and Evaluation in the Inclusion Classroom (3; taken during *Assistantship*)
 - d. SPED 405 Instructional-Strategies for Students with Learning Differences (3; taken during *Internship I*)
 - e. SPED 415 Collaborative Problem Solving and Application through Evidence Based Practices (3; taken during *Internship II*)

Professional Education Sequence (56 hours) See admission requirements

Pre-Entrance (10 credits)

- EDUC 100 Introduction to Teacher Education (1)
- EDUC 201 Students, Teachers and Learning Environments (3)
- EDUC 202 Foundations of Learning and Instruction (3)
- EDUC 325 Educational Technology (3)

Apprenticeship (7 hours)

EDUC 200 Teaching and Professional Assessment Laboratory (1)
EDUC 376 Special and Multicultural Education (3)
REED 323 Process and Acquisition of Reading (3)

Assistantship (14 hours; completed over 1 semester)

ELED 307 Teaching Assistantship (1)
EDUC 401 Assistantship Seminar (1)
ELED 471 Math Curriculum, Methods & Assessment (3)
ELED 474 Science Curriculum, Methods & Assessment (3)
ELED 475 Social Studies Curriculum, Methods & Assessment (3)
REED 473 Reading Instruction (3)

Internship I (13 hours; completed over 1 semester)

EDUC 402 Internship I Seminar (1)
ELED 494 Teaching Internship I: P-9 (6)
REED 420 Assessment for Reading Instruction (3)
REED 425 Materials and Motivations for Reading (3)

Internship II (12 hours; completed over 1 semester)

EDUC 422 Leadership Seminar P-9 (3)
ELED 495 Teaching Internship II: P-9 (9) (Capstone)

Other Internship Requirements

1. Students must complete any school district requirements (application, fingerprinting, background check, drug testing, etc.) in order to qualify for an internship placement

Other Graduation/Program Exit Requirements

1. Submission of a Teacher Performance Assessment that meets institutional standards.
2. Successful completion of an exit interview that meets institutional standards.
3. Completion of the Praxis II content knowledge and pedagogy tests required by the Maryland State Department of Education.
4. Successful completion of required field experiences in primary (1-3), intermediate (4-5) grades and **special education (1-8)**.

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

The Elementary/Special Education major, as designed will meet the accreditation requirements guided by the CAEP Elementary Standards (2018) and the Council for Exceptional Children's K-12 Initial Preparation Standard (2020). Once approved by the Maryland State Department of Education, the major will be recognized as a "Maryland Approved Program" and will be able to prepare candidates for state level certification. Upon graduation, FSU recommends program completers to MSDE for certification. Candidates are required by MSDE to pass all required Praxis Subject Tests and to submit EdTPA scores.

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

No other institutions or organizations are involved in the delivery of the proposed 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 interactions, 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 institution assures appropriate evidence that the proposed program, including financial aid resources, are provided to students with clear, complete, and timely information in the annual publication of the official [FSU Academic Catalog](#).

FSU's uses a powerful Learning Management System (LMS)-- Canvas--as the foundation for online and traditional learning. This tool plays a key role in supporting the overall educational experience. Resources can be found on the university [website](#). The academic supports services and programs are also on the university [website](#). Students receive information through the first year seminar course and new transfer students receive this information from their academic advisor.

The combination of FSU's Catalog, website, admissions and recruiting materials, and student information system provides students with all of this important information. Transfer agreements are available to prospective students on the university [website](#).

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 University assures through efforts provided by the Offices of Admissions and Marketing and Communications whose primary focus is to provide accurate advertising, recruiting, and admissions materials, that clearly and accurately reflect the proposed program. Marketing efforts also extend to services available by the Academic Success Network for existing students to support their academic success. The proposed program will be highlighted on the University's digital media presence that includes Instagram, Facebook, YouTube, TikTok and more.

H. Adequacy of Articulation

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

New articulation agreements and Memorandum of Understanding (MOU) with transfer institutions will be applied to this new major. Articulation agreements with identified Community Colleges would ensure that transfer students are able to seamlessly transfer into the new major at Program Entrance, with some Apprenticeship courses eligible for transfer equivalents. Existing agreements and MOUs with local school districts regarding field experiences will be used to provide the necessary placements for Elementary/Special Education candidates.

The provisionally signed articulation agreement with Allegany College of Maryland is included as Appendix B to this proposal.

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 faculty member will teach in the proposed program.**

The faculty teaching in the elementary major all have teaching experience in the elementary grades and terminal degrees in related fields of education. However, a new faculty hire is necessary to offer the expertise in Special Education required to support the specialization area in the dual certification major.

<u>Faculty Member:</u> <u>Elementary</u> <u>Education</u> <u>/Special</u> <u>Education</u>	<u>Degree</u>	<u>Rank</u> <u>Status</u>	<u>Undergraduate</u> <u>Courses in</u> <u>Elementary</u> <u>Education or</u> <u>Special</u> <u>Education (in</u> <u>bold)</u>	<u>Area of Expertise</u>
Dr. Jodi Welsch	Ph.D. in Elementary Education	Professor Full time	REED 420:Assessment for Reading Instruction; EDUC 401:Assistantship EDUC 402:Internship I, EDUC 422:Leadership seminars	Elementary Reading PreK – 9/ Program Director
Dr. Emily Milleson	Ed.D. in Curriculum and Instruction	Associate Professor Full time	REED 473:Reading Instruction, REED 425:Reading Materials and Motivation	Elementary Reading
Dr. Jodi Eirich	Ed.D. in Curriculum and Instruction	Associate Professor Full time	EDUC 202: Foundations of Learning and Teaching	Educational Psychology, Social Studies, Reading, Secondary Methods
Dr. Jamey Tobery Nystrom	Ed.D in Special Education/Leadership	Associate Professor Full time		Special Education, M.Ed (Designated campus is USM-Hagerstown)
Dr. Janet Mattern	Ed.D. in Curriculum and Instruction	Associate Professor Full time	EDUC 376:Special and Multicultural Education	Early Childhood, Early Intervention
Dr. Jennifer Rankin	Ed. D. in Educational Leadership	Associate Professor Full time	ELED 474: Elementary Mathematics Methods	Mathematics, STEM, Technology

Dr. Jennifer Bishoff	Ed.D. in Educational Leadership and Administration	Associate Professor Full time	ELED 471: Elementary Science Methods	Science, Secondary Education
Dr. Sarah O'Neal	Ed.D in Early Childhood Education	Associate Professor Full time	ELED 475: Elementary Social Studies Methods	Social Studies, Early Childhood
Dr. Christina Durham	Ed. D. in Curriculum and Instruction	Lecturer Full time	EDUC 201: Students, Teachers and Learning Environments; REED 323: Process and Acquisition of Literacy	Educational Foundations, Reading

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

Ongoing training is provided to faculty by the university in both pedagogy based on evidenced-based best practices and the technology. Ongoing pedagogy training is assured through the curriculum alignment for the proposed program with InTASC and Council for Accreditation of Education Preparation (CAEP) standards for Teacher Education. Pedological training and professional development is provided annually through the college and department and guided by our CAEP self-study process. The needs of the students are assessed and then addressed through the self-study process.

With regard to technology, Frostburg State University utilizes the Canvas learning management system and training sessions on this system are continually provided. All training and professional development of education faculty reflect evidence-based best practices, in order to meet the needs of all students.

Frostburg State University assures professional development in effective instructional design and teaching practices through the Center for Teaching Excellence (CTE). The CTE provides all new faculty with a teaching orientation as well as continuing professional development throughout the academic year. In addition, the Department of Educational Professions and the College of Education provide further professional development in teaching and learning practices in accordance with their CAEP accreditation standards.

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 Lewis J. Ort Library currently holds approximately 300,000 monographic and serial bound volumes in its collection, as well as over 17,500 audiovisual items and other media (DVDs, maps, etc.) materials. The Library also subscribes to 195 journals, magazines, and newspapers in print, microfilm, and electronic formats and provides access to approximately 75 online databases that cover a variety of academic disciplines and include over 72,000 full text journals, magazines and newspapers; another 70,000-plus peer-reviewed open access resources are linked to citations from these databases. Over 245,000 electronic books and 29,000 on-demand streaming videos are also available to students, faculty and staff. Specific database subscriptions supporting education research paid for by the Library include *Education Research Complete* (EBSCO), *ERIC*, *JSTOR*, *Nexis Uni* (formerly *LexisNexis Academic*), *Primary Search* (EBSCO), *Professional Development* (EBSCO), *ProQuest Dissertations & Theses Global*, *Teacher's Reference Center* (EBSCO), and *Web of Knowledge*. The subscription costs for these databases exceeds \$55,000 in FY 2023.

The Library's title holdings for monographs and multi-media materials in the relevant subject areas associated with the Department of Educational Professions' general and special programs total over 30,000 titles, including all formats (e.g., monographs, microforms, DVD/Videos, etc). The Library also houses a collection of print resources published specifically for children – the Juvenile Collection that includes 4,682 titles of fictional and non-fictional children's books. As a member of the Federal Depository Library Program, the Ort Library receives approximately 32% of all U.S. government documents published each year. Currently, nearly 60% of the Federal material received is electronically accessible from the Library's catalog. The Library also receives 100% of all Maryland State documents.

The Library's annual process to ensure measures and resources are adequate to support the proposed program include use of the operating funds to ensure ongoing payment of current periodical and serial subscriptions, and to provide financial resources to faculty who recommend book titles and audiovisual materials to enhance and update the program collections for their academic departments. In FY 2023, the Department of Educational Professions faculty has been allocated \$1500 for the purchase of print monographs and audiovisual materials. Over \$5000 of Ort Library's periodicals/serials budget is expended to continue 21 annual subscriptions associated with the department.

The Lewis J. Ort Library is one of 17 institutions participating in the University System of Maryland and Affiliated Institutions (USMAI) Consortium of Libraries, a collaborative resource sharing group currently managing two information and document delivery systems: *CatalogUSMAI*, and *OneSearch*. Using the Request feature of *catalogUSMAI* or *OneSearch*, FSU students and faculty can borrow monographs located in other USMAI libraries by placing requests to have them sent to the Ort Library where they can be charged out as easily as items in FSU's collection. For those materials that students and faculty cannot obtain in-house from the Library's print collections or electronically through *CatalogUSMAI* or *OneSearch*, traditional interlibrary loan (ILL) services are an alternative, extending access to the holdings of thousands of libraries in the United States.

The home page of the library is found here: <https://www.frostburg.edu/library/index.php>

K. Adequacy of Physical Facilities, Infrastructure and Instructional Equipment (as outlined in COMAR13B.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 current facilities, infrastructure and equipment at FSU which support the teacher education programs are adequate for the proposed major. The new Education and Health Sciences building (to open Spring 2023) will provide appropriate space for instruction, technological resources and faculty/staff offices.

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

This program is designed for face to face implementation, with some opportunities for blended instruction, using resources such as Canvas and Cisco Webex tools. All faculty and candidates have access to the FSU email system.

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

Narrative explanation must accompany each category. Please use this resource page:
https://mhec.maryland.gov/institutions_training/Documents/acadaff/acadproginstitapprovals/table1resources.pdf

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.

Elementary Special Education					
TABLE 1: RESOURCES	0	0	0	0	0
	FY2023	FY2024	FY2025	FY2026	FY2027
Resource Categories	Year 1	Year 2	Year 3	Year 4	Year 5
1. Reallocated Funds	0	0	0	0	0
2. Tuition/Fee Revenue	63,706	194,943	331,410	473,263	854,534
a. Number of F/T Students In-state	4	12	20	28	38
a. Number of F/T Students Out-of-state	1	3	5	7	17
b. Annual Tuition/Fee Rate In-state	9,786	9,982	10,182	10,386	10,594
b. Annual Tuition/Fee Rate Out-of-state	24,562	25,053	25,554	26,065	26,586
c. Total F/T Revenue (a x b)	63,706	194,943	331,410	473,263	854,534
d. Number of P/T Students In-State	0	0	0	0	0

d. Number of P/T Students Out-of-State	0	0	0	0	0
e. Credit Hour Rate In-State	281	289	298	307	316
e. Credit Hour Rate Out-of-State	598	616	634	653	673
f. Annual Credit Hour Rate	32	32	32	32	32
g. Total P/T Revenue In & Out-of-State	0	0	0	0	0
(d x e x f)	0	0	0	0	0
3. Grants, Contracts & Other External Sources	0	0	0	0	0
4. Other Sources	0	0	0	0	0
TOTAL (Add 1 – 4)	63,706	194,943	331,410	473,263	854,534

Table 1 Resources: Budget Narrative

1. Reallocated Funds: NA
2. Tuition/Fee Revenue: Full-time status. 20 percent out-of-state, 80 percent in-state
3. Grants, Contracts & Other External Sources: NA
4. Other Sources: NA
5. Total: Sum of total tuition and fees.

TABLE 2: EXPENDITURES	0	0	0	0	0
	FY2023	FY2024	FY2025	FY2026	FY2027
Expenditure Categories	Year 1	Year 2	Year 3	Year 4	Year 5
1. Faculty (b + c below)	87,750	90,383	93,094	95,887	98,763
a. # FTE	1.00	1.00	1.00	1.00	1.00
b. Total Salary	65,000	66,950	68,959	71,027	73,158
c. Total Benefits	22,750	23,433	24,135	24,860	25,605
2. Admin. Staff (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. Support Staff (b + c below)	2,159	2,223	2,290	2,359	2,430
a. # FTE	0.10	0.10	0.10	0.10	0.10
b. Total Salary	2,000	2,060	2,122	2,185	2,251
c. Total Benefits	159	163	168	173	179
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	0	0	0	0	0
TOTAL (Add 1 – 7)	89,909	92,606	95,384	98,246	101,193
Surplus	(26,203)	102,337	236,026	375,017	753,341

Table 2 Expenditures: Budget Narrative

1. Faculty: A new faculty position is required to deliver the new courses, to supervise candidates in special education placements, and co-teach with methods instructors. Current Elementary faculty will continue to teach the core course in the Elementary major and serve as instructors for the exiting courses, which are part of the Elementary major. The new faculty member will serve as the liaison for Special Education, focus on program assessments, data collection and analysis, as well as meeting accreditation requirements.
2. Admin. Staff: NA
3. Support Staff: NA
4. Equipment: NA
5. Library: NA
6. New or Renovated Space: NA
7. Other Expenses: NA
8. Total: A new faculty position is the only expenditure expected for this proposal.

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.

Evaluation of Faculty: Student evaluations are collected for each course through the University’s learning management system (Canvas) using a standard form that is used across all courses. Student evaluation scores and accompanying narratives are aggregated and presented to the instructor, by course. Frostburg State University has an institutionalized process of assessing student-learning outcomes in the majors. The Student Learning Assessment Advisory Group (SLAAG) and Graduate Learning Assessment Advisory Group (GLAAG) operate at the institutional level and focus of student learning outcomes following the timelines for the Institutional Effectiveness Cycle

The College of Education and the Department of Educational Professions has an existing Quality Assessment System and the accreditation activities associated with specialized professional associations, as well as

InTASC and CAEP standards. This new major will become part of that existing process of data collection, analysis, reporting and continuous improvement.

9. 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.

The program review schedule serves as the foundation for assessment initiatives through its identification of priorities for the coming cycle. Halfway through the cycle, the Office of Assessment and Institutional Research (AIR) collects information on the status of assessment activities using a midterm review template. Programs undergoing review in any given year must submit the Program Review Self-Study, External Review Report, and Certificate to AIR.

N. Consistency with the State's Minority Student Achievement Goals (as outlined in COMAR13B.02.03.05).

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

Frostburg State University is a public institution that is committed to a campus environment that values human diversity and represents individuals who represent diversity. It is a multi-cultural campus where diversity is highly valued. The program and university have established goals to recruit and support the minority population. This is reflected in the University's Core Value Statement: "Frostburg State University is committed to developing cultural competence and cultivating understanding and respect for a diversity of experiences and worldviews that encourage each person's ability to "take the perspective of the other."" Frostburg State University has initiatives to increase diversity in faculty and staff. The university has established a University Council on Diversity, Equity, and Inclusion (UCDEI) that is led by the University President.

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 Elementary Education major has been identified as a low productivity program, with less than 15 candidates graduating in the last 3 years. The major is being considered for suspension. Elements of the major, such as the courses and field experiences will remain active, as they serve the other two dual certification majors (Early Childhood/Elementary and Elementary/Middle Grades) and will be reallocated to support the new dual certification major.

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.

This program proposal will support an on-campus face-to-face modality.

Appendix A: Elementary/Special Education Dual Certification Major Courses

Course Title, Credits and Description

Elementary/Special Education Dual Certification Major

Requirements for Major

Completion of GEP (38 - 41 hours)

c. Core Skills (9)

i. ENGL 101/111 (3)

Description: Addresses the processes of composition and develops intermediate skills in writing essays with an argumentative edge. Based on readings for diverse audiences, prepares students for writing documented essays. Every semester. Students may not withdraw unless withdrawing from the University. Core Skill 1.

ii. MATH 109/110 (3)

Description: For the non-math major; less rigorous than MATH 380. Elementary probability theory; collection, organization and analysis of data; descriptive statistics; the normal and binominal distributions; introduction to inferential statistics; and applications. Every semester. Prerequisite: a passing score on the Mathematics Placement test administered by the University or DVMT 095. MAY NOT BE USED TO SATISFY THE REQUIREMENTS FOR A MAJOR OR MINOR IN MATHEMATICS. MAY BE USED TO FULFILL CORE SKILL 3.

OR MATH 119 (3)

Description: Functions and their graphs, inverse functions, solutions of equations and inequalities, polynomial and rational functions, exponential and logarithmic functions, systems of equations and matrices. Every semester. Prerequisite: A passing score on the Mathematics Placement Test administered by the University or a grade of B or better in DVMT 100. MAY NOT BE USED TO SATISFY THE REQUIREMENTS FOR A MAJOR OR MINOR IN MATHEMATICS. MAY BE USED TO FULFILL CORE SKILL 3.

iii. Advanced Writing course (3) - ENGL 308/309/310/312/300/330/338/339

Description: Development of advanced skills in writing based on reading for social science audiences. Preparation of extended papers; attention to research tools and documentation. Students may receive credit for only one of the following: 308, 309, 310 or 312. Every semester. Prerequisites: C or better in ENGL 101 or 111; and at least 42 credits or permission of Chair. Core Skill 2

d. Modes of Inquiry (29-32) including two 4-credit natural science courses. The following courses are recommended within the GEP.

i. ART 110 Visual Imagery (3)

Description: An introduction to the visual arts through theory and practice; exploring basic aesthetic concepts, modes of visual communication, expressive meaning of various materials, theoretical components and symbol systems. Admission priority for Early Childhood and Elementary Education majors. Every semester. GEP Group A.

ii. HIST 100/111 The Contemporary World Historical Perspective (3)

Description: A consideration of major historical developments of the last century in diverse areas of the world that illuminate contemporary problems. Every semester. GEP Group B or F.

iii. ENGL 150/250 Introduction to Literature (3)

Description: A thematic study of literature, looking across genres and cultures at contemporary topics. Continued development of writing skills. Every semester. GEP Group B.

iv. BIOL 109 Human Biology and the Environment (4)

Description: Study of the human species with emphasis on the interdependence of humans, other forms of life, and the physical environment. Three hrs. lecture, 2 hrs. lab. Not for majors or minors. Every semester. GEP Group C.

v. PHSC 203 Physical Science(4)

Description: Physical phenomena and their role in modern society: basic concepts of physics, chemistry, and astronomy, with energy and environment as the unifying theme. Three hrs. lecture and 3 hrs. lab. Every semester. Intended for education majors. GEP Group C.

vi. SOCI 100/111 Introduction to Sociology (3)

Description: Systematic introduction to the study of society. Basic concepts, methods of study, and theories about societal structures and processes. Every semester. Not open to students who have credit for former SOCI 201. GEP Group D.

vii. PSYC 150/151 Introduction to Psychology (3)

Description: Introduction to the methodology, theories, and applications of the science of animal and human behavior. Every semester. GEP Group D.

viii. IDIS 150 First Year FSU Colloquium

Description: Fostering a Sense of Understanding through exploration of a current issue, theme, problem, person or persons, cultural or historical period, world area or national region, or other unifying principle through interdisciplinary study, discussion, and activities. Every semester. To be completed within first 45 hours or soon after transfer is applicable. GEP Group E.

ix. GEOG 104/114 Human Geography (3)

Description: Earth-sun relations, map reading and interpretations, landforms, elements of weather and climate, and climate regions. Three hrs. lecture and 2 hrs. lab. Every semester. GEP Group C.

Additional Required Courses for Elementary Majors (16 hours)

11. MATH 206 Problem solving for Elementary Teachers I (3)

Description: Heuristics of problem solving, set theory, functions, estimation, measurement, numeration systems, rational numbers and elementary number theory. Emphasis on students constructing and expanding their mathematical knowledge using modern technologies and pedagogies to investigate questions and solve problems. Learning activities include collecting and analyzing data from simple experiments, identifying mathematical models for the data and using these models to make predictions which can then be tested. Admission priority will be given to Early Childhood Education and Elementary Education majors. Every semester. Prerequisite: a grade of C or better in either MATH 102/119 or MATH 109/209. **MAY NOT BE USED TO SATISFY THE REQUIREMENTS FOR A MAJOR OR MINOR IN MATHEMATICS.**

12. MATH 207 Problem solving for Elementary Teachers II (3)

Description: A continuation of MATH 206. Basic concepts of geometry, including measurement ideas, probability and statistics. Technological tools such as spreadsheets, geometric software and statistical packages will be used. Admission priority will be given to Early Childhood Education or Elementary Education majors. Every semester. Prerequisite: C or better in MATH 206. **MAY NOT BE USED TO SATISFY THE REQUIREMENTS FOR A MAJOR OR MINOR IN MATHEMATICS.**

13. 4 credit laboratory science elective (4) – GEOG 103/113 Physical Geography (recommended)

Description: Earth-sun relations, map reading and interpretations, landforms, elements of weather and climate, and climate regions. Three hrs. lecture and 2 hrs. lab. Every semester. GEP Group C.

14. MUSC 350 Music and Creative Interaction for the Elementary Classroom (3)

Description: Classroom use of music skills for children from pre-school through sixth grade. Emphasizes the elements and skills of music and provides opportunity to develop and apply teaching strategies to the teaching of music through moving, singing, listening, playing, reading, creating and creative interaction. Designed for the elementary education major. Every semester. Prerequisite: sophomore standing.

OR EDUC 333 Integrated Arts in the Elementary Classroom (3)

Description: Integrated Arts in the Elementary Classroom is designed to prepare candidates to integrate the arts into learning experiences in the elementary classroom. The course includes current theory in arts integration; background information on the elements of the creative arts; experiences with visual art, music and movement, creative writing, children’s literature, creative dramatics and puppetry; and planning arts-enhanced lessons appropriate for grades 1-6. Arts integration will be related to multicultural learning, differentiation for student learning, including gifted education, and educational technology. Every semester. Prerequisite: EDUC 100 or permission of instructor.

15. HPED 309 Wellness and the Whole Child (3)

Description: Principles and practices of educating the whole child within the Whole School, Whole Community, Whole Child (WSCC) Model. Emphasis on skills-based health education at the elementary school level. Topics include social-emotional learning (SEL), infusing movement into Common Core lessons, school wellness policies, and teaching sensitive topics. Every semester, summer.

Requirements for Special Education Specialization (24 hours)

7. Required Courses (6 credits)

- a. PSYC 150 General Psychology (GEP)

Description: Introduction to the methodology, theories, and applications of the science of animal and human behavior. Every semester. GEP Group D

- b. PSYC 210 Child Development

Description: Detailed review of the biological, cognitive, and socio-emotional aspects of development, from conception through childhood. More depth than PSYC 208. Every semester. Prerequisite: PSYC 150/151 with a “C” or better.

OR PSYC 208 Lifespan Development

Description: Survey of human development from conception to death, emphasizing biological, cognitive, and socio-emotional development. An overview for understanding how humans change across the lifespan. Less depth than PSYC 210 or PSYC 212. Variable. Prerequisite: PSYC 150/151 with a “C” or better.

8. Required Advanced Courses (9 credits)

- a. EDUC 376 Special and Multicultural Education

Description: Acquaints students with historical and legislative basis of special education in public schools. Characteristics of exceptional children, including social emotional, sensory, behavioral, physical, cognitive, and language. Understanding of eligibility determination as well as specifically designed instruction needed for equitable access of the curriculum. Understanding the influence of culture on learning and instruction. Every semester. Prerequisite: Admission to Apprenticeship.

9. Required Courses in Special Education (12 credits)

a. SPED 205 Supporting Students with Diverse Needs (3)

Description: Develop knowledge, skills, and dispositions to support diverse learners with academic and social emotional needs in the classroom. Identify evidence-based practices focus on identification strategies, functional behavior assessments, positive behavior supports, behavior intervention plans, academic interventions, self-regulation strategies, management of the classroom environment, and social emotional learning supports. Review relevant theories and research on supporting positive behavior change for students exhibiting challenging behaviors. Required for Elementary/Special Education. Variable. Prerequisite: EDUC 100.

b. SPED 390 Field Experience in Special Education (3 credits; taken during Apprenticeship)

Description: Supervised field experiences for Elementary/Special Education candidates in inclusive classroom settings grade 1 through 8, as well as specialized settings and programs. Develop knowledge skills, and dispositions of age-appropriate environments. Includes analyses of children's needs. Enable candidates to plan classroom environments which provide access to the curriculum, participation in classroom instruction, and support for all children in the classroom. Includes some class work. Required for Elementary/Special Education, Special Education specialization candidates only. Graded P/F. Variable. Prerequisite: Admission to Apprenticeship.

c. SPED 305 Assessment and Evaluation in the Inclusion Classroom (3; taken during Assistantship)

Description: Overview of basic concepts, ethical concerns, legal issues, and typical procedures related to the assessment and monitoring of exceptional individuals. Develop skills in the use of appropriate assessment instrument. Identify strategies that consider the influence of diversity on assessment practices and inclusion of students with exceptional learning needs. Required for Elementary/Special Education, Special Education specialization candidates only. Variable. Prerequisite: Admission to Assistantship; concurrent enrollment in Assistantship courses

d. SPED 405 Instructional-Strategies for Students with Learning Differences (3; taken during Internship I)

Description: Identify educational needs of exceptional children related to preventive and remedial education. Focus on appropriate strategies for four types of students with special needs: student with disabilities, gifted and talented learners, culturally and linguistically diverse individuals, and students at risk for school failure. Prepare candidates for the role as an instructional leader in the areas of inclusion, advocacy, and collaboration. Required for Elementary/Special Education, Special Education specialization candidates only. Variable. Prerequisite: Admission to Internship I; concurrent enrollment in Internship I courses.

e. SPED 415 Collaborative Problem Solving and Application through Evidence Based Practices (3; taken during Internship II)

Description: A problem-solving professional learning approach to explore high leverage practices in Special Education including behavioral interventions, family engagement, and specially designed instruction for the diverse learner. This course offers a forum to explore current and critical topics in order to collaboratively problem solve to meet the individualized education plan. Required for Elementary/Special Education, Special Education specialization candidates only. Variable. Prerequisite: Admission to Internship II; concurrent enrollment in Internship II courses.

Professional Education Sequence (56 hours) See admission requirements

6. Pre-Entrance (10 credits)

a. EDUC 100 Introduction to Teacher Education (1)\

Description: Analysis of education in America and the potential roles to be played both in schools and in the wider community. A preliminary self-assessment of how the students' interests and abilities match the demands of the educational profession. Observations with reflections. Every semester. Required: taken prior to admission to Apprenticeship. Recommended: taken within first 2 semesters at Frostburg State University.

b. EDUC 201 Students, Teachers and Learning Environments (3)

Description: A study of students, teachers and learning environments, including the philosophical and historical foundations of the American educational system. Basis for further study in education, including topics on legal and ethical issues and diversity. Every semester. Prerequisite: EDUC 100. May be taken Pre-entrance or concurrently with Apprenticeship

c. EDUC 202 Foundations of Learning and Instruction (3)

Description: The learning and teaching process in the American educational system. Human growth and development of students birth-21, learning theories and styles, instructional strategies and adaptations. Controlled observations in educational settings. Every semester. May be taken Pre-entrance or concurrently with Apprenticeship. Recommended to be taken after EDUC 201.

d. EDUC 325 Educational Technology (3)

Description: Provides opportunities for experiences and practice in using technology tools for educators. Emphasis on the use of technology within the context of accomplishing authentic tasks. Every semester. Must be completed prior to Internship I. Prerequisite: completion of at least 12 credit hours. Tech. fluency.

7. Apprenticeship (7 hours)

a. EDUC 200 Teaching and Professional Assessment Laboratory (1)

Description: Through a series of live or video-recorded teaching sessions, students acquire skill in assessing their own strengths and weaknesses as teachers. Students will write instructional objectives, prepare lesson plans and teach a series of 10-minute lessons to their peers. Includes screening for selected teaching proficiencies. This course is required in all teacher education programs. Graded P/F. Every semester. Prerequisite: admission to Apprenticeship.

b. EDUC 376 Special and Multicultural Education (3)

Description: Acquaints students with historical and legislative basis of special education in public schools. Characteristics of exceptional children, including social emotional, sensory, behavioral, physical, cognitive, and language. Understanding of eligibility determination as well as specifically designed instruction needed for equitable access of the curriculum. Understanding the influence of culture on learning and instruction. Every semester. Prerequisite: Admission to Apprenticeship.

c. REED 323 Process and Acquisition of Reading (3)

Description: Process of language development, including impact of phonemic awareness, and how the brain responds to reading acquisition. Practical applications of research in language development, acquisition and use. Understanding of the role of experiential background, prior knowledge, motivation and personal significance to emerging readers. Every semester. Prerequisite: Admission to program.

8. Assistantship (14 hours; completed over 1 semester)

a. ELED 307 Teaching Assistantship (1)

Description: Supervised assisting at the early childhood, elementary and middle school levels. Joint supervision by school system and university personnel. Daily, full-day field clinical experience. Graded P/N. May only be repeated once, upon approval of the program coordinator. Every semester. Prerequisite: Admission to Assistantship; concurrent enrollment in Assistantship courses.

b. EDUC 401 Assistantship Seminar (1)

Description: Analysis of planning, instruction and assessment components of effective teaching at the assistantship level. Management strategies for student behavior, curriculum, material selection and resources. Reflective self and peer evaluation of teaching performance in the classroom. Every semester. Prerequisites: Admission to Apprenticeship and concurrent enrollment in ELED 307.

c. ELED 471 Math Curriculum, Methods & Assessment (3)

Description: Planning, constructing and organizing curriculum; types of curricula. Methods, materials, content and assessment for teaching P-8 mathematics. Every semester. Prerequisite: Admission to Assistantship; concurrent enrollment in Assistantship courses.

d. ELED 474 Science Curriculum, Methods & Assessment (3)

Description: Planning, constructing, and organizing curriculum; types of curricula. Methods, materials, content and assessment for teaching P-9 science. Every semester. Prerequisite: Admission to Assistantship; concurrent enrollment in Assistantship courses.

e. ELED 475 Social Studies Curriculum, Methods & Assessment (3)

Description: Planning, constructing and organizing curriculum; types of curricula. Methods, materials, content and assessment for teaching P-9 social studies. Every semester. Prerequisite: Admission to Assistantship; concurrent enrollment in Assistantship courses.

f. REED 473 Reading Instruction (3)

Description: Knowledge of best practices and instructional strategies that focus on the purposes for reading. How to use a balanced program of phonics, semantics and syntactics in teaching reading. Methods, materials and content for teaching reading in grades P-9. Knowledge of early identification and intervention strategies for low-achieving readers. Every semester. Prerequisite: Admission to Assistantship; concurrent enrollment in Assistantship courses.

9. Internship I (13 hours; completed over 1 semester)

a. EDUC 402 Internship I Seminar (1)

Description: Analysis of planning, instruction and assessment components of effective teaching at the Internship I level. Management strategies for student behavior, curriculum, materials selection and resources. Reflective self and peer evaluation of teaching performance in the classroom. Every semester. Prerequisites: Admission to Internship I and concurrent enrollment in ELED 494.

b. ELED 494 Teaching Internship I: P-9 (6)

Description: Supervised practicum at the early childhood, elementary and middle school levels. Joint supervision by school system and university personnel. Daily, full-day clinical experience. When taken during the fall semester, includes a multiple-day, beginning-of-school experience. Graded P/N/F. May only be repeated once, upon approval of the program coordinator. Every semester. Prerequisite: Admission to Internship I; concurrent enrollment in Internship I courses

c. REED 420 Assessment for Reading Instruction (3)

Description: Understanding of the use of national, state, local and classroom reading assessment data to make ongoing instructional modifications as a strategy for prevention and intervention. Understanding of a variety of reading assessments and curriculum adjustments. Communicating assessment data about individual student reading performance to appropriate sources. Every semester. Prerequisite: Admission to Internship I, concurrent enrollment in Internship I courses.

d. REED 425 Materials and Motivations for Reading (3)

Description: Support for long-term motivation of developing readers within a framework of inquiry. Experience a variety of texts, including fiction and nonfiction, to be used in the classroom. Apply strategies for selecting materials, retrieving and evaluating materials. Understanding of accessibility, variety of media, multicultural materials, text features and oral and written responses to literature. Knowledge of the role of parents in supporting reading programs. Every semester. Prerequisite: Admission to Internship I, concurrent enrollment in Internship I courses.

10. Internship II (12 hours; completed over 1 semester)

a. EDUC 422 Leadership Seminar P-9 (3)

Description: Development of educational leaders in the classroom, school, community, and profession. Elements of developmentally appropriate planning, instruction, assessment and classroom management and the collection of evidence of candidate's practices in the final internship. Management strategies for student behavior, curriculum, material and resources. Professional preparation, critical reflection and advocacy emphasized. Every semester. Prerequisite: Admission to Internship II. Capstone.

b. ELED 495 Teaching Internship II: P-9 (9) (Capstone)

Description: Supervised practicum at the early childhood, elementary and middle school levels. Joint supervision by school system and university personnel. Daily, full day clinical experience. When taken during the fall semester, includes a multiple day beginning of school experience. Graded P/N/F. May only be repeated once, upon approval of the program coordinator. Every semester. Prerequisite: Admission to Internship II and concurrent enrollment with EDUC 422. Capstone.

**Appendix B. Provisionally signed articulation agreement with
Allegany College of Maryland
Working Draft**

**ACADEMIC PROGRAM ARTICULATION AGREEMENT BETWEEN
ALLEGANY COLLEGE OF MARYLAND AND
FROSTBURG STATE UNIVERSITY REGARDING TRANSFER FROM ALLEGANY COLLEGE OF MARYLAND
Elementary Education AAT or A.S., TO B.S., ELEMENTARY/SPECIAL EDUCATION
DUAL CERTIFICATION MAJOR**

This Academic Program Articulation Agreement (“Agreement”) is entered into by and between Allegany College of Maryland (the “Sending Institution”) and Frostburg State University (the “Receiving Institution”) (collectively, the “Institutions”) to facilitate the transfer of academic credits from the ELEMENTARY EDUCATION (AAT) or (AS) (CIP: 131202; HEGIS: 496011) for the completion of the B.S. Elementary/Special Education Dual Certification Major (CIP: 131001 HEGIS: 080800)

A. Qualifying Students

This Agreement pertains to the transfer of “Qualifying Students”, *i.e.*, those students who:

1. Have successfully completed the program at the Sending Institution;
2. Are enrolled in the Sending Institution, in good standing; and
3. Are accepted for admission to the Receiving Institution
4. Have earned a C grade or better in required courses.

B. Responsibilities of the Institutions

The Institutions agree to implement the transfer of Qualifying Students in accordance with applicable law and the following requirements and protocols:

1. A Qualifying Student may transfer into from the Transferring Institution into the Receiving Institution for the completion of the Program.
2. Courses that the Receiving School will accept credits EDUC towards completion of the Program include:

REQUIRED COURSES TO BE TRANSFERRED OR TAKEN AT FSU (Main Campus only)

Sending Institution		Receiving Institution			GRADE (could be listed in Provisions)	Applied to Major/G EP
ACM CODE	COURSE TITLE	FSU CODE	FSU	CRE DIT HOU		
EDUC	Career Analysis in Education (<i>can be</i>	EDUC 100	1	1		Major
EDUC	Students, Teachers, & the Learning	EDUC 201	3	3		Major
EDUC 204	Foundations of Learning and Instruction	EDUC 202	3	3		Major
EDUC	Special and Multicultural Education	EDUC 376	3	3		Major
EDUC	Processes and Acquisition of Reading	REED 323	3	3		Major
PSYC 203 (<i>option – AAT</i>)	Lifespan Development OR Child Development	PSYC 208 PSYC 210		3		Major
MUS	Music for the Elementary Classroom	MUSC	3	3		Major
PHED	Health and PE for Elementary Teachers	HPED 309	3	3		Major

MATH 102 or MATH	Probability & Statistics or College Algebra	MATH 109 or MATH	3	3		Major &
MATH	Problem Solving for Elem. Teachers I	MATH	3	3		Major
MATH	Problem Solving for Elem. Teachers II	MATH	3	3		Major
ENGL	Freshman Composition	ENG 101	3	3		Major &
ENGL	Introduction to Literature	ENGL 150	3	3		Major &
ART	Visual Imagery	ART 110	3	3		Major &
PSYC	General Psychology	PSYC 150	3	3		Major &
GEOG 102 or SOC	Human/World Regional Geography OR Intro to Sociology	GEOG 104/110	3	3		Major &
	Supporting Students with Diverse	SPED 205	3	3		Major

** This course is new to the major, and the department will work with ACM to include it as a transfer credit because it is a 200-level course.

*Receiving Institution must indicate if course is applied to General Education, Program/Major requirements, or General Elective.

Additional Provisions:

- Students in the Elementary/Special Education Program need to complete 12 credits of natural sciences. Each course needs to have a laboratory component. The third science is applied to FSU’s GEP requirement of IDIS 350. The program recommends candidates take BIO 131 or BIO 101, PHYS 130, and PHYS 132 at ACM.
- Students will be required to take First-year FSU Colloquium. SPCH 101 satisfies that requirement.
- If the students choose to take both GEOG 102 and SOC 101, the GEOG 102 course will be applied to Identity & Difference Requirement in the GEP. The SOC 101 will satisfy the Social Science component of the GEP.
- Students need to complete a 3-credit history course to satisfy the General Education Humanities and the program requirements.
- Upon entry into Apprenticeship phase, fingerprinting as a background check is required and a negative result on current TB test.
- Prior to entering the Professional Sequence, students need to have qualifying scores on PRAXIS CORE, SAT, ACT, or a cumulative GPA of 3.0 on all transfer credits that apply to the program.
- The Receiving Institution shall designate, and shall provide to the Sending Institution, the contact information for a staff person at the Receiving Institution who is responsible for the oversight of the transfer of Qualifying Students. The Sending Institution shall designate, and shall provide to the Receiving Institution, the contact information for a staff person at the Sending Institution who is responsible for the oversight of the transfer of Qualifying Students.

	Sending Institution	Receiving Institution
Name of staff person responsible for oversight	Jennifer Engelbach	Natalie Wagoner
Title of staff person	Executive Director of Enrollment and Advising Services	Director FSU Admissions
Email address	jengelbach@allegany.edu	nmwagoner@frostburg.edu
Telephone Number	301-784-5656	301-687-4201

Should the staff person or position change, the institution will promptly provide new contact information to the partner institution and inform the Maryland Higher Education Commission of the change.

Additional contact information:

[Role & Responsibilities of persons listed here]	Sending Institution	Receiving Institution
Name of person	Dr. Miha Wood	Dr. Doris Santamaria-Makang

Title of person	Dean for Arts and Sciences	Department Chair Educational Professions
Email address	mwood1594@allegany.edu	dsantamariamakang@fostburg.edu
Telephone Number	301-784-5301	301-687-7018

10. If the Qualifying Student is using federal Title 38 VA Education Benefits (GI Bill® Education Benefits), the Institutions shall adhere to all applicable U.S. Department of Veterans Affairs’ regulations, including the regulations governing the awarding prior credit, as regulated under Title 38, Code of Federal Regulations, Sections 21.4253(d)(3) and 21.4254(c)(4).
11. Each Institution shall adhere to all applicable transfer requirements set forth in the Annotated Code of Maryland and the Code of Maryland Regulations.
12. Each Institution shall advise students regarding transfer opportunities under this Agreement and shall advise students of financial aid opportunities and implications associated with the transfer.
13. Should either Institution makes changes to program requirements, the institution will inform the partner institution immediately. The articulation agreement should be updated to reflect the changes and forwarded to the Maryland Higher Education Commission.

C. Term and Termination

1. This agreement shall be effective on the date that it is signed by the appropriate and authorized representatives of each Institution.
2. Either Institution may, at its sole discretion, terminate this Agreement upon delivering 90 days written notice to the other Institution and the Maryland Higher Education Commission.
3. Both Institutions agree to meet once every 3 year(s) to review the terms of this agreement.

D. Amendment

1. This Agreement constitutes the entire understanding and agreement of the Institutions with respect to their rights and obligations in carrying out the terms of the Agreement and supersedes any prior or contemporaneous agreements or understandings.
2. This Agreement may be modified only by written amendment executed by both Institutions.

E. Governing Law

This Agreement shall be governed by, and construed in accordance with, the laws of the State of Maryland.

F. Counterparts

This Agreement may be executed in counterparts, each of which shall be deemed to be an original, but all of which, taken together, shall constitute one and the same agreement.

G. Notice of Agreement

1. The Institutions agree to provide a copy of this Agreement, with any amendments, to the Maryland Higher Education Commission.

Articulation Agreement Template is provided by the Maryland Higher Education Commission (MHEC) and is a resource for institutions. This template is not legal advice. Institutions should consult their own legal counsel regarding articulation agreements and other agreements, contracts, or institutional policies. Please provide a copy of all institutional articulation agreements to MHEC.

A.A.T or A.S., Elementary Education to a B.S. in Elementary/Special Education at Frostburg State University Articulation Agreement
Page 5 of 6

- 2. The Institutions agree to provide copies of this Agreement to all relevant individuals and departments of the Institutions, including but not limited to students, academic department chairs participating in the transfer, offices of the president, registrar’s offices, and financial aid offices.

H. No Third-Party Beneficiaries

There are no third-party beneficiaries to this Agreement.

I. Representations and Warranties of the Parties

Both Institutions represent and warrant that the following shall be true and correct as of the Effective Date of this Agreement, and shall continue to be true and correct during the term of this Agreement:

- 1. The Institutions are and shall remain in compliance with all applicable federal, state, and local statutes, laws, ordinances, and regulations relating to this Agreement, as amended from time to time.
- 2. Each Institution has taken all action necessary for the approval and execution of this Agreement.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed by their duly authorized representatives.

Allegany College of Maryland

Frostburg State University

By: _____
Cynthia S. Bambara, Ph.D.
President

By: Ronald Nowaczyk
Ronald Nowaczyk, Ph.D.
President

Date

12/7/2022

Date

By: _____
Kurt Hoffman, Ed. D.
Chief Academic Officer

By: _____
Traki L. Taylor, Ph.D.
Provost, Academic Affairs

Date

Date



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

TOPIC: Academic Program Proposal:
Frostburg State University (with UMCES): Master of Environmental Management in Sustainability

COMMITTEE: Education Policy and Student Life

DATE OF COMMITTEE MEETING: Tuesday, January 10, 2023

SUMMARY: Frostburg State University (FSU) and the University of Maryland Center for Environmental Science (UMCES) are proposing a joint Master of Environmental Management (MEM) in Sustainability degree. As a vibrant, regional comprehensive university in Mountain Maryland, FSU plays a leadership role in regional workforce development. Frostburg has a long-standing relationship with UMCES via the Appalachian Laboratory and through an existing joint M.S. degree program in Wildlife/Fisheries Biology. The University of Maryland Center for Environmental Science has strong name recognition and standing in the environmental field, particularly as it relates to research, policy, and programming aimed at improving and preserving Maryland’s physical environment.

A joint Master of Environmental Management (MEM) will help to meet growing demand in the regional workforce. Environmental jobs in the region (e.g., staffers and agency personnel in corporate sustainability, resource management, environmental engineering, and non-governmental organizations) are frequently being filled by graduates from non-regional institutions. The MEM will be offered as an accelerated 4+1 pathway for baccalaureate students at FSU to reduce burden and increase benefits for learners (e.g., lessening debt load, reducing time to degree, and providing a skills-driven degree). In this way, the joint MEM will grow a pipeline of diverse employees for the regional environmental workforce.

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

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

CHANCELLOR’S RECOMMENDATION: That the Education Policy and Student Life Committee recommend that the Board of Regents approve the proposals from Frostburg State University (with UMCES) to offer the Master of Environmental Management in Sustainability.

COMMITTEE RECOMMENDATION: DATE: January 10, 2023

BOARD ACTION: DATE:

SUBMITTED BY: Joann A. Boughman 301-445-1992 jboughman@usmd.edu



One University. A World of Experiences.

OFFICE OF THE PROVOST
101 BRADDOCK ROAD
FROSTBURG, MD 21532-2303
T 301.687.4211
F 301.687.7960

November 15, 2022

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

Dear Chancellor Perman,

Frostburg State University (FSU) and the University of Maryland Center for Environmental Science (UMCES) are proposing a joint Master of Environmental Management (MEM) in Sustainability degree. A market study report commissioned by UMCES and conducted by the Hatcher Group assessed market demand and Maryland-specific trends in degree conferral and enrollment, finding a growing demand for post-baccalaureate programs in environmental science and related fields. Nationally, jobs in environmental science and related fields are projected to grow at average to above-average rates over the next decade. In Maryland, these fields are generally projected to experience average to above-average job growth. As a vibrant, regional comprehensive university in Mountain Maryland, FSU plays a leadership role in regional workforce development. Frostburg has a long-standing relationship with UMCES via the Appalachian Laboratory and through an existing joint M.S. degree program in Wildlife/Fisheries Biology. The University of Maryland Center for Environmental Science has strong name recognition and standing in the environmental field, particularly as it relates to research, policy, and programming aimed at improving and preserving Maryland's physical environment.

A joint Master of Environmental Management (MEM) will help to meet growing demand in the regional workforce. Environmental jobs in the region (e.g., staffers and agency personnel in corporate sustainability, resource management, environmental engineering, and non-governmental organizations) are frequently being filled by graduates from non-regional institutions. The MEM will be offered as an accelerated 4+1 pathway for baccalaureate students at FSU to reduce burden and increase benefits for learners (e.g., lessening debt load, reducing time to degree, and providing a skills-driven degree). In this way, the joint MEM will grow a pipeline of diverse employees for the regional environmental workforce.

This accelerated pathway program is for students pursuing a B.S. or a B.A. who seek to obtain Master's-level training and practical work experience to further develop their careers or to explore expanded professional opportunities. The MEM will attract a new cadre of students to FSU and UMCES as it will be open to students with academic interests beyond the sciences (e.g., legal/regulatory, resource management, economics, and business). Students majoring in a range of existing FSU Bachelor's-level programs will be able to pursue the MEM through an accelerated 4+1 pathway. This diversity of backgrounds will be critical in fostering the varied perspectives necessary

for a successful master's program in environmental management and reflects the need for diverse voices to address pressing sustainability and resiliency challenges.

Both institutions have signed a finalized Memorandum of Understanding (MOU) that is included in this proposal. The faculty governance and administrations of both institutions have approved this program proposal.

Proposal Title: New academic program proposal
Program Title: Master of Environmental Management in Sustainability
Award Level: Master's Degree
CIP: 030103
HEGIS: 042000

We would appreciate your support for the proposed joint degree program. If you have any questions, please do not hesitate to contact me or our Assistant Vice President for Analytics, Dr. Sara-Beth Bittinger, at sbittinger@frostburg.edu.

Sincerely,



Traki L. Taylor, Ph. D.
Provost and Vice President for Academic Affairs

pc: Dr. Darlene Smith, Interim Associate Vice Chancellor for Academic Affairs, USM
Dr. Sara-Beth Bittinger, Interim Assistant Vice President for Analytics, FSU
Dr. Michael Mathias, Interim Dean of the College of Liberal Sciences, FSU

UNIVERSITY SYSTEM OF MARYLAND INSTITUTION PROPOSAL FOR

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

Frostburg State University

Institution Submitting Proposal

Master of Environmental Management in Sustainability

Title of Proposed Program

Master's Degree

Award to be Offered

42000

Proposed HEGIS Code

Fall 2023

Projected Implementation Date

30103

Proposed CIP Code

College of Liberal Arts and Sciences

Department in which program will be located

Dr. Benjamin Norris

Department Contact

301-687-4157

Contact Phone Number

bnnorris@frostburg.edu

Contact E-Mail Address



Signature of President or Designee

11/15/22

Date

**GUIDELINES FOR PROPOSING
NEW ACADEMIC DEGREE PROGRAMS, NEW STAND-ALONE CERTIFICATE PROGRAMS, AND SUBSTANTIAL
MODIFICATIONS**

An institution submits a proposal using guidelines in accordance with State regulations found in **COMAR 13B.02 .03**. Proposals shall be submitted electronically to **acadprop.mhec@maryland.gov**.

A complete proposal shall include a:

1. **Cover letter** from the chief academic officer addressed to the Secretary of Higher Education requesting approval of the new program
2. **Proposal Cover Sheet** with all required signatures and should address all of the following areas:

A. Centrality to Institutional Mission 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 mission of Frostburg State University (FSU) is to serve as a student-centered teaching and learning institution featuring experiential learning opportunities that enhance and enrich the academic environment of the University. Frostburg serves regional and statewide economic and workforce development; promotes cultural enrichment, civic responsibility, and sustainability.

The University of Maryland Center for Environmental Sciences (UMCES) has a unique statutory mandate to conduct a comprehensive scientific program and apply predictive ecology for the improvement and preservation of Maryland's physical environment. This mission is accomplished through research, education, and public service.

As a vibrant, regional comprehensive university in Mountain Maryland, FSU plays a leadership role in regional workforce development. FSU has a long-standing relationship with UMCES via the UMCES Appalachian Laboratory (located adjacent to the FSU campus) and through existing joint M.S. degree programs in Applied Ecology and Conservation Biology and Wildlife/Fisheries Biology. UMCES has strong name recognition and standing in the environmental field, particularly as it relates to research, policy, and programming aimed at improving and preserving Maryland's physical environment.

In support of both missions, FSU and UMCES will offer a joint Master of Environmental Management (MEM) in Sustainability. This MEM program is a non-thesis master's degree focusing on practical application of concepts in environmental science, management, and sustainability across several disciplines. A core feature of this program is a team science approach to solving real-world sustainability problems provided by partner organizations in the academic, governmental, nonprofit, and private sectors. Down the line, FSU and UMCES will develop a memorandum of understanding creating accelerated pathways into the MEM for FSU students pursuing a B.S. or a B.A. who seek to obtain Master's-level training and practical work experience to further develop their careers or to explore expanded professional opportunities.

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

Frostburg State University and the University of Maryland Center for Environmental Science are committed to developing a pipeline of diverse graduates into the environmental workforce. The MEM will attract a new cadre of students to FSU and UMCES as it will be open to students with academic interests beyond the sciences (e.g., legal/regulatory, anthropological, resource management, economics, business). Once the MEM is established, FSU and UMCES will articulate accelerated pathways into the MEM. Students majoring in a range of existing FSU Bachelor's-level programs will be able to pursue the MEM through an accelerated 4+1 pathway. This diversity of backgrounds will be critical in fostering the varied perspectives necessary for a successful MEM program and reflects the need for diverse voices to address pressing sustainability and resiliency challenges. Additionally, there is future potential to create a post-baccalaureate certificate based on national job growth projections in several environmental fields, to meet the demand for offerings specifically targeting working professionals.

The leadership at both partner institutions have committed to growing and expanding joint pathways that advance opportunities for students to achieve a graduate degree effectively and efficiently.

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.

Leadership at both institutions have committed to provide program and field placement coordination resources. The curriculum will be provided by existing faculty. See section I.

4. Provide a description of the institution's a commitment to:

- a) ongoing administrative, financial, and technical support of the proposed program

The MEM program will be offered using existing faculty and technical support at both FSU and UMCES. FSU is committed to reallocating 50% of a faculty FTE to coordinate the program and teach new courses. UMCES is committed to reallocating 50% of a faculty FTE to facilitate field placements and teach courses. Both institutions are committed to providing the resources specified in sections I through L.

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

FSU and UMCES will offer the MEM program for an initial period of at least seven years. At the end of the first three-year period, the program will be reviewed to determine if enrollment projections are being met. If enrollment projections are not being met, FSU and UMCES will develop a plan to increase enrollment.

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

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

FSU serves a unique role as the only public comprehensive university west of the Baltimore-Washington corridor in providing educational opportunities to students in Western Maryland. As of fall 2021, FSU's undergraduate student population is 50% Black, Indigenous, or Students of Color. Slightly more than 40% are first-generation students, and a similar percentage are low-income (Pell-eligible). FSU is committed to increasing educational access and attainment for these students. The proposed MEM will create a pathway into a new field of graduate study for these students.

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

- 2. Provide evidence that the perceived need is consistent with the 2022 Maryland State Plan for Higher Education.

The proposed program supports all three goals of the 2022 Maryland State Plan for Higher Education: Student Access, Student Success, and Innovation.

Student Access:

The proposed program is being developed to increase access to graduate education for diverse student populations within the Western Maryland region. FSU and UMCES recognize the potential to increase the number of underrepresented minorities in graduate education by offering lower-cost options. Students in this program will pay FSU graduate tuition, which is among the lowest in the state. Additionally, if this program is approved, FSU and UMCES will establish an accelerated combined degree program allowing students to complete a BS from FSU and the MEM in a total of five years which decreases the overall cost of education.

Student Success:

The proposed program will promote student success as broadly defined in the state plan. FSU and UMCES are committed to maintaining high-quality postsecondary education and to improving pathways toward timely degree completion. This program represents an innovative field of study that fills an emerging workforce need. The proposed program is also being developed as part of a pipeline to graduate studies. As previously noted, if this program is approved, FSU and UMCES will create an accelerated 4+1 pathway that allows students from diverse undergraduate backgrounds to complete a BS and this proposed MEM in five years of combined study.

Innovation:

The proposed program is innovative in the way that it leverages the strengths of two institutions to provide a quality educational experience. UMCES has a strong international recognition in the environmental sciences but does not have the infrastructure to manage student enrollment. FSU has a graduate catalog of diverse courses for its graduate programs. Students in the proposed program will gain access to UMCES and FSU faculty and courses while FSU provides the infrastructure for managing graduate student enrollment.

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.

Conversations with potential employers, including environmental engineering firms, state agencies, public/private partnerships, corporate entities, and non-governmental agencies (NGO) anticipate engaging participants as interns with the goal of offering entry-level employment upon graduation. It is expected that the advanced degree earned (MEM) will facilitate enhanced opportunities for professional advancement. Since graduates of this program will have an existing bachelor's degree in a field other than Environmental Science, the additional skills knowledge and skills acquired from the MEM will certainly enhance employability, particularly as all organizations grapple implementing internal and externally-mandated sustainability and resilience goals and/or requirements.

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

Per an UMCES commissioned market survey, it was found that:

- Nationally, jobs in environmental science and related fields are projected to grow at average to above-average rates in the next 10 years.
- In Maryland, these fields are generally projected to experience average to above average job growth.
- Interviews with prospective employers indicated a universal need to recruit graduates with a) field skills capacity, b) team science skills and c) practical experience.

It should be noted that students that complete the combined five-year BS/MEM will come from diverse undergraduate backgrounds. It is anticipated that many of these students will seek employment in those chosen fields utilizing the skills acquired from the MEM to specialize within said field (for example, a student with a BS in Business may well pursue a corporate career in management and leverage their expertise in sustainability and resilience to better guide corporate decision-making). As such, any assessment of market demand for the myriad disciplines that could receive an MEM is impractical. For our purposes, we will focus on the Environmental Sciences which could represent an unknown percentage of admitted students.

The [MD Department of Labor, Licensing, and Regulation](#) (DLLR) provides long-term employment projections in the state. The most relevant job titles of graduates are:

Occ. Code	Title	2018 MD Employment	2028 Projection	Change	% Change
11-9041	Architectural and Engineering Managers	5,898	6,223	+325	+5.51%
11-9121	Natural Science Managers	4,126	4,369	+243	+5.89%
17-2081	Environmental Engineers	1,624	1,746	+121	+7.45%
19-1031	Conservation Scientist	441	478	+37	+8.39%
19-2041	Environmental Scientists and Specialist	3,179	3,598	+419	+13.18%
	TOTAL	15,268	16,414	+1,146	+7.51%

Nationally, between 2020 and 2030, these jobs are expected to grow as follows: (<https://www.bls.gov/ooh>).

Occ. Code	Title	Employment Change 2020-2030	% Change
11-9041	Architectural and Engineering Managers	+8,100	+4%
11-9121	Natural Science Managers	+4,500	+6%
17-2081	Environmental Engineers	+1,900	+4%
19-1031	Conservation Scientist	+2,900	+7%
19-2041	Environmental Scientists and Specialist	+7,900	+8%

In addition, students graduating from the proposed program will likely fall into a variety of other job titles, including Construction Managers, Management Analysts, Operations Research Analysts, Urban and Regional Planners, and Occupational Health and Safety Specialists.

Occ. Code	Title	2018 MD Employment	2028 Projection	Change	% Change
11-9021	Construction Managers	11,589	12,452	+863	+7.45%
13-1111	Management Analysts	29,263	34,562	+5,299	+18.11%
15-2031	Operations Research Analysts	4,377	5,623	+1,246	+28.47%

19-3051	Urban and Regional Planners	903	1,034	+131	+14.51%
19-5011	Occupational Health and Safety Specialists	1,167	1,289	+122	+10.45%
	TOTAL	47,299	54,900	+7,661	+16.20%

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.

A market study report commissioned by the University of Maryland Center for Environmental Science (UMCES) and conducted by the Hatcher Group assessed market demand and Maryland-specific trends in degree conferral and enrollment. This analysis found a growing demand for post-baccalaureate programs in environmental science and related fields. Nationally, jobs in environmental science and related fields are projected to grow at average to above-average rates in the next 10 years. In Maryland, these fields are generally projected to experience average to above average job growth. See appendix A: Market Study.

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

The following table summarizes master’s degree graduates from similar degree programs in the State in 2014 and 2019.

<https://mhec.maryland.gov/publications/Documents/Research/AnnualReports/2019DegreesbyProgram.pdf>

Program Name	Institution	Degrees Awarded in 2014	Degrees Awarded in 2019
Master of Environmental Management	Univ. of Maryland Global Campus	87	43
MA in Environmental Studies	Goucher College	0	1
MA in Geography and Environmental Planning	Towson University	9	4
MS in Environmental Planning and Management	Johns Hopkins University	23	13
	TOTAL	119	61

The decline in traditional environmental master’s degrees in this table contrasts with the anticipated regional increase in need for trained environmental professionals shown above. Much of this need is likely to be met by importing expertise from other states and programs unless Maryland-based programs such the proposed MEM increases the locally-trained 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.

There is only one existing Master of Environmental Management in the State of Maryland. Additionally, there are three other master's degree programs which may be similar (see table above).

The proposed program is different than the one at UMGC. First, the proposed FSU/UMCES MEM is an in-person degree, while the UMGC program is fully online. Second, the FSU/UMCES program is focused on sustainability and the impact on society, while the UMGC program is more general. Third, the FSU/UMCES program is built around a core team science approach to solving problems for partner organizations. The UMGC program is not structured in this way. Finally, the FSU/UMCES program will have a flexible interdisciplinary curriculum, while the UMGC program is proscribed.

The MHEC Program Inventory also lists an MS degree in Environmental Studies at Goucher College. This program might have been like the proposed MEM, but the program is not listed in the current Goucher catalog suggesting it has been suspended. Goucher does offer a MA in Cultural Sustainability. The proposed MEM is different in that it focuses on environmental sustainability.

There are two master's degree programs in Environmental Planning in the State of Maryland: one at Towson University and one at Johns Hopkins. Environmental Planning is a similarly interdisciplinary field to environmental management. Both include scientific, social, and societal perspectives, but environmental planning focuses on natural resource development. The proposed MEM focuses on sustainable management of already developed resources. Additionally, neither of these degree programs feature the applied team science approach to solving problems in sustainable management.

This program is also different than FSU's existing master's degrees in Applied Ecology and Conservation Biology or Wildlife & Fisheries Biology. It is also different from the Marine Estuarine Environmental Science (MEES) master's degree program offered by UMCES in partnership with other USM institutions. These existing programs are thesis-based master's degree programs requiring individual research in the natural sciences. The proposed MEM is a non-thesis applied master's degree that incorporates disciplinary perspectives outside of the natural sciences.

2. Provide justification for the proposed program.

This proposed program is necessary to meet growing workforce demand. As discussed in section C, employment growth in the State related to environmental management is expected to be as much as 100 or more new positions each year. Degree production in this field at the master's level was only 61 graduates in 2019. The number of graduates in these programs is down from 119 in 2014. This new MEM is needed to help return the annual number of graduates to the numbers needed to meet workforce demand.

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.

None of the similar programs in Maryland are at HBIs, so the proposed MEM should have no impact on high-demand programs at HBIs. However, should this MEM be successful, UMCES is willing to partner with HBIs in the state to create similar joint and collaborative degree programs, each focusing on particular areas of academic distinction for the individual HBIs.

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.

With FSU's location and demographics having a positive impact in rural areas in Western Maryland and surrounding areas, the program indicates a high likelihood that it will not have negative impacts on the uniqueness and institutional identities of HBIs. As noted previously, no existing similar programs are offered at the master's level by HBIs. If this proposed MEM program is successful, UMCES is willing to partner with other institutions, including HBIs, to develop similar programs built on the distinct strengths of each other partner institution.

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.

The Master of Environmental Management program was developed collaboratively by FSU and UMCES with input from the faculty at both institutions. The program was developed to meet increased needs for professionals working in environmental management and sustainability in academic, business, government, and nonprofit organizations. The program will be overseen by a program coordinator who is a faculty member at FSU assisted by a field supervision coordinator from the UMCES faculty.

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

The FSU-UMCES joint Master of Environmental Management (MEM) in Sustainability will be a non-thesis master's degree focusing on practical application of concepts in environmental science, management, and sustainability. It will develop a pipeline of diverse graduates into the environmental workforce, attracting a new cadre of students from different racial, ethnic, and academic backgrounds. It will offer training in the fundamentals of environmental science, team science, science communication, and environmental management, incorporating an apprenticeship experience that leads to a capstone final project. It will condense this training into a 4+1

Bachelors/Master’s program that will reduce financial burdens and increase benefits for learners, with direct pathways into the regional environmental workforce.

Learning Outcomes include:

1. A fundamental understanding of one or more chosen environmental and/or associated social science disciplines.
2. An understanding of environmental field sampling methods, constraints, and analyses.
3. An ability to synthesize and communicate environmental science for management purposes.
4. An ability to work in and/or lead teams of environmental scientists and managers.
5. An ability to apply environmental science in a workplace setting and produce a professional final report.

3. Explain how the institution will:

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

Frostburg State University has an institutionalized process of assessing student-learning outcomes in the academic programs. Student learning outcomes assessment for this MEM program will be conducted by the program faculty at both FSU and UMCES. At FSU, learning outcomes assessment is coordinated in the College of Liberal Arts and Sciences by the College of Liberal Arts and Sciences’ Assessment Council. The Graduate Learning Assessment Advisory Group (GLAAG) operates at the institutional level and reviews assessment of student learning outcomes following the timelines for the Institutional Effectiveness Cycle.

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

The Master of Environmental Management will require 30 credits of graduate study as follows. The program requirements include both FSU and UMCES coursework. UMCES courses will be cross listed as FSU courses with the SUST prefix.

Program Core: 21 credits

Students will complete each of the following courses.

Course	Title	Credit hours	Institution
BIOL 643	Ethics, Economics and Politics in Conservation	2	FSU
SUST 698Y (new)	Science for Environmental Management	3	UMCES
SUST 698Z (new)	Environmental Field Methods	3	UMCES
RECR 651	Organizational Behavior and Leadership in Recreation and Parks Management	3	FSU
SUST 591 (new)	Team Science Seminar (1 credit course repeated each regular term of enrollment)	4	FSU
SUST 595 (new)	Apprenticeship in Environmental Management	4	FSU
SUST 700 (new)	Capstone Project in Environmental Management	2	FSU

Environmental Systems Elective: 3 credits: Students will complete one of the following courses.

Course	Title	Credit hours	Institution
SUST 620	Environment and Society	3	UMCES
SUST 640	Interconnected Earth Systems	3	UMCES
SUST 660	Ecological Systems	3	UMCES
SUST 680	Cell and Molecular Biology for Environmental Scientists	3	UMCES

Other Electives: 6 credits

Students will complete two of the following courses, all of which are currently offered at either FSU or UMCES. The MEM Program Coordinator may approve other courses from the graduate offerings at FSU and UMCES. The course selected for the Environmental Systems Elective cannot be used to meet this elective requirement, although if students take additional Environmental Systems Electives beyond the one required course, those may count as Other Electives. Courses marked with an asterisk (*) are offered for both undergraduate and graduate credit at FSU. Any courses taken for undergraduate credit or used to meet the program admission requirements cannot be used to meet the graduate program requirements.

Course	Title	Credit hours	Institution
BIOL 520*	Fish Management and Culture	3	FSU
BIOL 525*	Forest Ecology and Conservation	3	FSU
BIOL 550*	Ecology and Management of Wildlife Populations	3	FSU
BIOL 641	Conservation Biology & Reserve Design	3	FSU
BIOL 650	Special Topics in Fisheries/Wildlife/Applied Ecology and Conservation Biology: <i>Topics approved by Program Coordinator</i>	3-4	FSU
ECON 510*	Resource and Environmental Economics	3	FSU
FINA 610	Financial Management	3	FSU
GEOG 506*	Management and Conservation of Natural Resources	3	FSU
GEOG 521*	Regional Planning	3	FSU
GEOG 550	Urban Planning	3	FSU
GEOG 560*	Natural Hazards in the Physical Environment	3	FSU
GEOG 572*	Environmental Planning	3	FSU
GEOG 573*	Environmental Law	3	FSU
MATH 570*	Mathematical Models and Applications	3	FSU
MGMT 512	Management Decision Analysis	3	FSU
MGMT 621	Foundation of Analytics	3	FSU
RECR 641	Managing Open Space Resources	3	FSU
SUST 607	Quantitative Methods in Environmental Science	3	UMCES
SUST 608Q	Global Climate Change	3	UMCES
SUST 620	Environmental and Society	3	UMCES
SUST 622	Sustainability Science: Quantitative and Systems Approach	3	UMCES
SUST 640	Interconnected Earth Systems	3	UMCES
SUST 660	Ecological Systems	3	UMCES
SUST 680	Cell and Molecular Biology for Environmental Scientists	3	UMCES
SUST 698X	Global Environmental Remote Sensing	3	UMCES

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Course descriptions are presented in Appendix B.

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

As this is a graduate program, there are no general education requirements. However, as a requirement for admission, students will need to have completed a baccalaureate degree, which includes general education, from a regionally accredited college or university.

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

The following are the admissions requirements for the Master of Environmental Management program.

1. Completion of FSU online graduate program application and submission of all required materials:
 - A. Official transcripts of all previous graduate and undergraduate work.
 - B. A current CV or resume.
 - C. A brief essay defining the student's interest in environmental management and sustainability.
 - D. Three letters of recommendation from persons familiar with the academic work of the applicant or persons able to assess the professional interest or experience of the applicant in environmental management and sustainability.
 - E. Official copies of all applicable test scores.
 - F. International students must complete additional admission requirements, including demonstration of English proficiency and any student visa requirements. Current requirements will be published on the web annually by FSU's Center for International Education and office of Graduate Services.
2. The cumulative cross-institutional undergraduate GPA must be 3.0 or higher. Some students with a GPA below 3.0 may be provisionally accepted based on related research or work experience.
3. Completion of a bachelor's degree from a regionally accredited college or university. Students may apply for admission after the completion of 75 semester hours of their bachelor's degree course work.
4. Official GRE scores are optional and will not be considered as criteria for admission to the program.
5. Completion of the prerequisite coursework at the undergraduate level with a grade of C or better. These requirements are intentionally broad to allow students from diverse undergraduate programs of study to be able to enroll in the MEM program.
 - A. Two Introductory Science Courses

FSU students will complete these required courses by selecting two of the following courses to satisfy the Natural Sciences requirements in FSU's General Education Program:

- BIOL 149/159 General Biology 1
- CHEM 201 General Chemistry I

- GEOG 103/113 Physical Geography
- PHYS 261 Principles of Physics 1

Students from other institutions will meet this requirement by completing any two introductory (100- or 200-level or equivalent) lab science courses (at least four credits)

B. Two Advanced Science Courses

FSU students will complete these required courses from a published list of 300- or 400-level Biology, Chemistry, Engineering, Geography, or Physics courses in the broad areas of ecology, environmental science, sustainability, environmental analysis, wildlife & fisheries, energy engineering, earth sciences, and others. More than 50 current undergraduate courses at FSU could be used to meet this requirement, and a current list will be published annually.

Students from other institutions will meet this requirement by completing similar courses at the 300- or 400-level (or equivalent) as part of their baccalaureate degree.

C. Two Quantitative Courses

Two courses in calculus, statistics, or computer programming are required. FSU students will complete requirement by selecting two of the following courses, some of which are General Education courses:

- COSC 101 The Discipline of Computer Science
- COSC 130 Introduction to Programming
- MATH 109 Elements of Applied Probability and Statistics (GEP Core Skills 3)
- MATH 220 Calculus for Applications
- MATH 236 Calculus I (GEP Core Skills 3)
- MATH 280 Introductory Applied Statistics and Data Analysis
- MATH 380 Introduction to Probability and Statistics

Students from other institutions will meet this requirement by completing similar courses as part of their baccalaureate degree.

D. Two Foundation Courses

Two undergraduate courses related to environmental management or sustainability.

FSU students will complete this requirement by selecting two courses at the 300- or 400-level drawn from the humanities, social sciences, business, and education disciplines. A list of available foundation prerequisites will be published annually.

Students from other institutions will meet this requirement by completing similar courses at the 300- or 400-level (or equivalent) as part of their baccalaureate degree.

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

FSU and UMCES have established an MOU describing cost sharing. A copy is attached as Appendix C.

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.

FSU will provide the following services for all students in the program: Graduate program, and course catalog, graduate admissions, registration, billing, financial aid, learning management system, accessibility services, transcripts, degree audits, and diploma production.

FSU provides all students with sufficient information on curriculum, course and degree requirements, cost, financial aid, method of delivery, technology requirements, the Canvas learning management system, and support services through the Graduate Catalog, the FSU website, FSU admissions and recruiting materials, and FSU's student information system. FSU also complies with the Higher Education Opportunity Act of 2008 (HEOA) related to disclosure requirements for postsecondary institutions.

UMCES will provide complimentary information about the program on its website.

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.

All program materials will clearly represent the proposed program and services available and will be available on both FSU and UMCES websites. All such materials will be checked by the relevant offices and officials at both institutions for accuracy.

H. Adequacy of Articulation

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

This program is a joint degree utilizing coursework offered by both FSU and UMCES. The MOU articulating the responsibilities of both institutions is included in Appendix C.

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 faculty member will teach in the proposed program.

This program will be supported by a combination of FSU and UMCES faculty with appropriate academic credentials in a variety of disciplines. The program is mostly comprised on courses that support existing graduate programs at both institutions, and the identified faculty members already teach those courses as part of those programs:

- Master of Business Administration (FSU)
- Master of Education, Interdisciplinary (FSU)
- MS in Conservation Biology & Applied Ecology (FSU)

- MS in Marine Estuarine Environmental Sciences (UMCES)
- MS in Recreation, Parks, and Sport Management (FSU)
- MS in Wildlife and Fisheries Biology (FSU)

Faculty resources to teach the three courses unique to the program (SUST 591, SUST 595, and SUST 700) and to coordinate the program will be provided by reallocation. No new faculty lines will be required for this program. See Section L for more information.

The following tables list the UMCES and FSU faculty supporting the program and the courses they teach. These faculty are academically and/or professionally qualified to teach the graduate course work in the program.

Three courses in the program core (SUST 591, SUST 595, and SUST 700) as well as BIOL 650 are courses with individualized content. They will be taught by a variety of faculty members from both institutions.

UMCES Faculty

Name	Appointment Type	Terminal Degree	Rank	Status	Courses
Castro, Mark	Tenured/ Tenure-track	PhD in Environmental Science	Associate Professor	Full-Time	SUST 640
Cochrane, Mark	Tenured/ Tenure-track	PhD in Ecology	Professor	Full-Time	SUST 608Q
Davidson, Eric	Tenured/ Tenure-track	PhD in Forestry	Professor	Full-Time	SUST 622
Dennison, William	Tenured/ Tenure-track	PhD in Biology	Professor	Full-time	SUST 620 SUST 698Y
Elmore, Andrew	Tenured/ Tenure-track	PhD in Geological Sciences	Professor	Full-time	SUST 671 SUST 698
Gonsior, Michael	Tenured/ Tenure-track	PhD in Biogeochemistry	Associate Professor	Full-time	SUST 640
Hilderbrand, Robert	Tenured/ Tenure-track	PhD in Ecology	Associate Professor	Full-time	SUST 660
Lapham, Laura	Tenured/ Tenure-track	PhD in Ecology	Associate Professor	Full-time	SUST 640
O'Neil, Judith	Non Tenure-Track	PhD in Oceanography	Associate Research Professor	Full Time	SUST 698Z
Place, Allen	Tenured/Tenure-track	PhD in Biochemistry	Professor	Full time	SUST 680
Sanford, Lawrence	Tenured/ Tenure-track	PhD in Oceanographic Engineering	Professor	Full-Time	SUST 607
Rose, Kenneth	Tenured/ Tenure-track	PhD in Fisheries	Professor	Full-time	SUST 591 SUST 620 SUST 660
Woodland, Ryan	Tenured/ Tenure-track	PhD in Fisheries	Associate Professor	Full-time	SUST 660
Zhang, Xin	Tenured/ Tenure-track	PhD in Environmental Science	Professor	Full-time	SUST 622

FSU Faculty

Name	Appointment Type	Terminal Degree	Rank	Status	Courses
Allen, Phillip	Tenured/ Tenure-track	PhD in Quaternary Science	Associate Professor	Full-Time	GEOG 506 GEOG 572
Buta, Natalia	Tenured/ Tenure-track	PhD in Tourism, Recreation, and Sport Management	Associate Professor	Full-Time	RECR 641 RECR 651
Chory, Rebecca	Tenured/ Tenure-track	PhD in Management	Professor	Full-Time	MGMT 510
Draper, Jason	Non-Tenure Track	EdD in Educational Leadership	Lecturer	Part-Time	MGMT 621
Dunmyre, Justin	Tenured/ Tenure-track	PhD in Mathematics	Associate Professor	Full-Time	MATH 570
Kucher, Oleg	Tenured/ Tenure-track	PhD in Economics	Associate Professor	Full-Time	ECON 510
Nguyen, Dung	Tenured/ Tenure-track	PhD in Finance	Assistant Professor	Full-Time	FINA 610
Rahman, Shakil	Tenured/ Tenure-track	PhD in Management	Professor	Full-Time	MGMT 512
Raesly, Richard	Tenured/ Tenure-track	PhD in Biology	Professor	Full-Time	BIOL 520 BIOL 525
Reynolds, Jennifer	Tenured/ Tenure-track	PhD in Geography	Instructor	Full-Time	GEOG 560 GEOG 573
Russo, Richard	Tenured/ Tenure-track	PhD in Geography	Associate Professor	Full-Time	GEOG 521 GEOG 550 GEOG 572
Serfass, Thomas	Tenured/ Tenure-track	PhD in Wildlife & Fisheries Science	Professor	Full-Time	BIOL 550 BIOL 641 BIOL 643

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

Free training and professional development in pedagogy is provided by FSU's Center for Teaching Excellence which hosts an annual regional conference on teaching and learning each January, annual teaching orientations for new faculty, and periodic workshops on various topics throughout the academic year. Additional support and training in instructional design and technology is available through the office of Information Technology. Participation in these opportunities will be granted to UMCES faculty as well. The Teaching and Learning Transformation Center at the University of Maryland College Park campus is available to UMCES faculty as well for workshops, training, help with learning objectives and digital transformation.

- b) The learning management system

FSU uses Canvas as its LMS. The office of Instructional Design and Technology provides support and training through the onboarding process for new faculty as well as regularly throughout the year. UMCES faculty will have access to the same Canvas training offered to FSU faculty. UMCES faculty utilize a variety of LMS technology. The FSU registrar's office will facilitate input of student data into the FSU LMS.

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

The proposed MEM is an in-person program, though some elective courses may be offered in an online modality. FSU's office of Instructional Design provides training and certification for online instructors, and many online instructors are Quality Matters certified.

Additionally, some electives offered by UMCES will be offered synchronously over video conferencing software to allow UMCES faculty located at the Horn Point Laboratory or other locations to teach students at FSU.

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.

Since the proposed MEM is an interdisciplinary degree that builds upon coursework in existing programs, holdings in FSU's Lewis J. Ort Library for current programs will be adequate to support the proposed MEM. UMCES is a full member of the University System Maryland and Affiliated Institutions library consortium for both online and interlibrary loans. UMCES campuses also maintain small research libraries including archival Chesapeake reports and journals.

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 proposed MEM will be offered utilizing existing facilities, equipment, and infrastructure. No new faculty lines are required, so existing faculty and staff office space at FSU and UMCES are adequate. In-person course offerings will utilize existing classrooms (including FSU's IVN classrooms), equipment, and technology at both FSU and UMCES.

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
FSU provides all students and faculty an electronic mail account through Office 365, maintained by the Office of Information Technology. Through single sign-on technology, the log in for this email account also serves as the log in for the learning management system and the student information system.

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

FSU utilizes the Canvas learning management system for all courses, including online courses. Canvas integrates the WebEx videoconferencing platform to support distance education. Both Canvas and WebEx are supported by FSU's Office of Information Technology. UMCES faculty and staff have access to Canvas and Moodle learning management systems. UMCES will be responsible for providing students access to UMCES courses and integrating UMCES courses into FSU's learning management system. UMCES has been delivering content remotely throughout the distributed campus since the mid-1990s. Each UMCES unit has fully equipped video classrooms and video conferencing capabilities.

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.
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.

MEM

TABLE 1: RESOURCES

Resource Categories	FY2023 Year 1	FY2024 Year 2	FY2025 Year 3	FY2026 Year 4	FY2027 Year 5
1. Reallocated Funds	219,780	219,780	219,780	219,780	219,780
2. Tuition/Fee Revenue	47,880	71,938	94,416	118,293	132,636
(c + g below)	0	- 0	-0	0-	0-
a. Number of F/T Students In-state	0	- 0	- 0	-0	0-
a. Number of F/T Students Out-of-state	0	- 0	- 0	- 0	- 0
b. Annual Tuition/Fee Rate In-state	9,786	10,079	10,381	10,692	11,013
b. Annual Tuition/Fee Rate Out-of-state	24,562	25,298	26,057	26,839	27,644
c. Total F/T Revenue (a x b)	0-	- 0	- 0	-0	- 0
d. Number of P/T Students In-State	5	6	8	10	11
d. Number of P/T Students Out-of-State	0	1	1	1	1
e. Credit Hour Rate In-State	456	470	484	499	514
e. Credit Hour Rate Out-of-State	588	606	624	643	662
f. Annual Credit Hour Rate	21	21	21	21	21
g. Total P/T Revenue In & Out-of-State	47,880	71,938	94,416	118,293	132,636
(d x e x f)	0	- 0	- 0	- 0	- 0
3. Grants, Contracts & Other External Sources	0	- 0	- 0	- 0	- 0
4. Other Sources (Fees)	1,680	2,352	3,024	3,696	4,032
TOTAL (Add 1 – 4)	269,340	294,070	317,220	341,769	356,448

TABLE 2: EXPENDITURES

Expenditure Categories	FY2023	FY2024	FY2025	FY2026	FY2027
	Year 1	Year 2	Year 3	Year 4	Year 5
1. Faculty (b + c below)	152,280	152,280	152,280	152,280	152,280
a. # FTE	1.000	1.000	1.000	1.000	1.000
b. Total Salary	112,800	112,800	112,800	112,800	112,800
c. Total Benefits	39,480	39,480	39,480	39,480	39,480
2. Admin. Staff (b + c below)	67,500	67,500	67,500	67,500	67,500
a. # FTE	0.50	0.50	0.50	0.50	0.50
b. Total Salary	50,000	50,000	50,000	50,000	50,000
c. Total Benefits	17,500	17,500	17,500	17,500	17,500
3. Support Staff (b + c below)	17,915	17,915	17,915	17,915	17,915
a. # FTE	0.50	0.50	0.50	0.50	0.50
b. Total Salary	17,302	17,302	17,302	17,302	17,302
c. Total Benefits	613	613	613	613	613
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	0	-0	-0	-0	-0
TOTAL (Add 1 – 7)	237,695	237,695	237,695	237,695	237,695

Surplus 31,645 56,376 79,525 104,074 118,753

Narrative Rationale:

The budget assumes a 3 percent increase annually. The MEM program will be offered using existing faculty and technical support at both FSU and UMCES. FSU is committed to reallocating 50% of a faculty FTE to coordinate the program and teach new courses. UMCES is committed to reallocating 50% of a faculty FTE to

facilitate field placements and teach courses. No additional financial resources are required. One Graduate Assistant will provide the coordinator administrative support.

Table 1

1. Reallocated Funds: FSU Faculty expenses reallocated. Reassign time for both FSU faculty.
2. Tuition/Fee Revenue: Under Tuition and Fee Revenue the assumptions include 90% Maryland residents and 10% out of state. Tuition increases of 3 % annually.
3. Grants, Contracts & Other External Sources: NA
4. Other Sources: NA
5. Total: Tuition and Fee Revenue the assumptions include 90% Maryland residents and 10% out of state.

Table 2

1. Faculty: FSU is committed to reallocating 50% of a faculty FTE to coordinate the program and teach new courses. UMCES is committed to reallocating 50% of a faculty FTE to facilitate field placements and teach courses.
2. Admin. Staff: NA
3. Support Staff: One Graduate Assistant will provide administrative support to the program coordinator; the estimate includes tuition remission and stipend.
4. Equipment: NA
5. Library: NA
6. New or Renovated Space: NA
7. Other Expenses: NA
8. Total: The budget assumes a 3 percent increase annually. The MEM program will be offered using existing faculty and technical support at both FSU and UMCES. FSU is committed to reallocating 50% of a faculty FTE to coordinate the program and teach new courses. UMCES is committed to reallocating 50% of a faculty FTE to facilitate field placements and teach courses. No additional financial resources are required. One Graduate Assistant will provide the coordinator administrative support.

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.

Evaluation of Courses and Faculty: Student evaluations are collected for each course through the University's learning management system (Canvas) using a standard form that is used across all courses. Student evaluation scores and accompanying narratives are aggregated and presented to the instructor, by course. Student evaluations are provided to academic departments and are one component of the annual evaluation of all faculty. FSU will provide student evaluation information to UMCES for UMCES faculty teaching courses in this program.

Evaluation of Student Learning: Frostburg State University has an institutionalized process of assessing student-learning outcomes in the academic programs. Student learning outcomes assessment for this MEM program will be conducted by the program faculty coordinated by the College of Liberal Arts and Sciences' Assessment Council. The Graduate Learning Assessment Advisory Group (GLAAG) operates at the institutional level and reviews assessment of student learning outcomes following the timelines for the Institutional Effectiveness Cycle.

3. 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.

Like all academic programs at FSU, the Master of Environmental Management will undergo an intensive review every seven years as required by the USM. This review covers educational and cost effectiveness, assessment of learning outcomes, and adequacy of human, capital, and fiscal resources. The first such review would occur in 2030.

Halfway through this cycle, FSU's Office of Assessment and Institutional Research (AIR) collects information on the status of assessment activities using a midterm review template. Also at this time, FSU's Institutional Priorities and Resources Committee of the Faculty Senate will review the program to determine if it is meeting its enrollment projections and receiving appropriate resources.

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.

Frostburg State University is a public institution that is committed to a campus environment that values human diversity and represents individuals who represent diversity. It is a multi-cultural campus where diversity is highly valued. The program and university have established goals to recruit and support the minority population. This is reflected in the University's Core Value Statement: "Frostburg State University is committed to developing cultural competence and cultivating understanding and respect for a diversity of experiences and worldviews that encourage each person's ability to "take the perspective of the other."" Frostburg State University has initiatives to increase diversity in faculty and staff. The university has established a University Council on Diversity, Equity, and Inclusion (UCDEI) that is led by the University President.

Because of FSU's diverse undergraduate student body, this program will provide access to graduate education to underrepresented students, including minority students.

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.

NA

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.

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 and online learning environment. FSU is an approved institutional member of the National Council of State Authorization Reciprocity agreement (NC-SARA). UMCES is also approved to offer distance education as evidenced in its MSCHE Statement of Accreditation Status and has been doing so synchronously for more than 30 years.

Appendix A: Market Study

In this report commissioned by the University of Maryland Center for Environmental Science (UMCES), The Hatcher Group assesses market demand and learner preferences for credit-bearing and non-credit certificate programs aimed at advancing the training of workforce professionals.

Key Findings

- **Degree Conferral and Enrollment Growth** – National and Maryland-specific trends in degree conferral and enrollment suggest growing demand for post-baccalaureate, or graduate, certificate programs, particularly in environmental science and related fields, suggesting long-term viability for programs targeting enrolled master’s or Ph.D. students and working professionals.
- **Employment Projections** – Nationally, jobs in environmental science and related fields are projected to grow at average to above-average rates in the next 10 years. In Maryland, these fields are generally projected to experience average to above-average job growth.
- **Peer Comparison** – While many peer institutions offer at least one graduate certificate or degree pathway for working professionals in the environmental science field, none offers the wide variety of programs UMCES is considering. This provides an opportunity for UMCES to corner a segment of the student market, particularly working environmental professionals on the Eastern seaboard.
- **Graduate Certificate** – Both the qualitative and quantitative research suggests considerable interest in a specialization track within the UMCES Master’s and Ph.D. program. This evidence, coupled with upward enrollment trends in post-baccalaureate certificate programs and a positive jobs outlook, supports introducing such an offering. However, student interest declines dramatically if the certificate pathway proposed would increase the cost of attendance, extend their length of study, or impact their ability to conduct research.
- **Professional Certificate** – There is clear interest in programs aimed at advancing the training of environmental professionals. National enrollment growth in post-baccalaureate certificate programs, coupled with national job growth projections in several environmental fields, suggests demand for offerings specifically targeting working professionals. Our analysis of target learner preferences suggests that schedule, cost, and topic areas of study will be important factors to consider in developing program characteristics.
- **Specialized Professional Training** – Due to the ill-defined nature of certificates and limited comparable data, assessing student demand for specialized training certificates is difficult. Our qualitative and quantitative research suggests general interest in trainings across the environmental workforce – including among those who have not completed a bachelor’s or Master’s/Ph.D.
- **UMCES’ Reputation & Standing** – UMCES has very strong name recognition and standing in the environmental field, particularly as it relates to research, policy, and programming around the Chesapeake Bay and its watershed. UMCES is seen as a “responsive,” “accessible,” and “trusted” institution that has the credibility and reputation to successfully expand education and training opportunities. This credibility will allow UMCES to think creatively about what’s next. You can go in any direction, but where do you want to go?

Appendix B: Course Descriptions

BIOL514 - Quantitative Analysis of Vertebrate Populations (3 credits)

A survey of quantitative techniques used to describe, analyze, and model vertebrate population phenomena and interactions among populations. Three 2-hr. lectures, one 3 hr. lab. Prerequisites: MATH 120 and graduate standing.

BIOL520 - Fish Management and Culture (3 credits)

Contemporary problems encountered with Fisheries Management. Study of fish culture; alternatives of commercial harvest and culture. Three 1-hr. lectures and one 3-hr. lab. Field trips to be arranged. Prerequisites: BIOL 340 or permission of instructor.

BIOL521 - Sample Design and Analysis of Plant Communities (3 credits)

The ecology of plant communities in the mid-Atlantic; plant community concepts and attributes; environmental factors influencing the distribution and abundance of plants: light, temperature, fire, soil, water, methods of sampling vegetation; quantitative analysis of vegetation data; multivariate methods of data interpretation including classification and ordination; collection and interpretation of field data; emphasis on modern computer methods. Lecture/lab. Prerequisites: BIOL 314 and BIOL 340.

BIOL525 - Forest Ecology

Investigation of forest ecology, management, conservation, policy, research and history; silviculture, stand dynamics and improvement, reforestation, soils, disturbances and a natural pests and pathogens. Patters and processes of forest communities. Forest products and measurements. Two hrs. lecture, one 2 hr. lab. .

BIOL550 - Ecology and Management of Wildlife Populations (3 credits)

Study of factors that determine the distribution and abundance of wildlife populations and current management practices used to manipulate wildlife populations. Two-three field trips will be used to gain knowledge of regional management practices. Three hrs. lecture. Prerequisite: BIOL 406, 423 or 426.

BIOL609 - Plant Ecology (3 credits)

Ecological principles and relationships at the organism, population, and community levels. The plant and the ecosystem. Field trips and field analysis of plant communities. One hr. lecture and 4 hrs. lab. Prerequisites: BIOL 340, 314 or 603, 8 hrs. general chemistry or permission of instructor.

BIOL612 - Animal Ecology (3 credits)

Ecological principles and relationships of organism, population, and community levels. The animal's relation to ecosystems. Three hrs. lecture. Prerequisites: 1 year bioscience or zoology, BIOL 411, 340 and 8 hrs. general chemistry or permission of instructor.

BIOL640 - Population and Conservation Genetics (3 credits)

Importance of genetics in the management of game and non-game species will be emphasized with special reference to genetic management of threatened, rare or endangered species. Two hrs. lecture, one 3-hr. lab. Prerequisite: one course in genetics.

BIOL641 - Conservation Biology & Reserve Design (3 credits)

Examination of modern topics in conservation biology emphasizing impacts of habitat insularization and related landscape perturbations on population dynamics, social structure, genetic diversity, and ecological

interactions of organisms. Application of these factors in the design of nature reserves and maintenance of biodiversity. Three-hr. lecture. Prerequisite: graduate standing.

BIOL643 - Ethics, Economics, and Politics in Conservation (3 credits)

An examination of political and economic considerations associated with protection of endangered species and special habitats. Case histories of conflicts among competing forces for natural resources. Two-hr. lecture.

BIOL650 - Special Topics in Fisheries/Wildlife/Applied Ecology and Conservation Biology (2-4 credits)

Course content and credit hours vary depending on the course topic and instructor. Course topics will include Ecology, Evolution, and Management of Tropical Fishes; Techniques in Field Ecology; Advanced Animal Behavior; Aquatic Entomology; and Conservation and Management in Tropical Ecosystems. Consult Director of AL or Chair of Biology for current offerings. Repeatable for maximum of 12 credits if topics are substantially different.

ECON510 - Resource & Environmental Economics (3 credits)

Economic analysis of problems and policies affecting natural resource industries and the environment. Economic framework, mineral, forest, energy industries and environmental use and misuse are analyzed. Prerequisite: Economics 202 or permission of instructor.

FINA610 - Financial Management (3 credits)

Uses analytical tools and concepts utilized by managers to make the financial decisions consistent with the goals of the firm through the application of selected cases, research project and problems. Topics include, but are not limited to, capital budgeting, risk analysis, cost of capital, capital structure, dividend policy and working capital management. Prerequisite: ACCT 507 or waiver from the course.

GEOG506 - Management & Conservation of Natural Resources (3 credits)

Current problems associated with the use and misuse of natural resources. Prerequisites: GEOG 103 (or 113) and 104 (or 114) and/or permission of instructor.

GEOG521 - Regional Planning (3 credits)

Contemporary topics in regional planning and development. Group and individual projects and research. Prerequisite: GEOG 325 or permission of instructor.

GEOG550 - Urban Planning (3 credits)

City Planning: needs assessment, land use suitability, policy and design. Participation in limited scope planning projects. Prerequisite: GEOG 324 or permission of the instructor.

GEOG560 - Natural Hazards in the Physical Environment (3 credits)

Study of hazards to human society arising from wind, water and earth, either independently, or from human activities. Perception, prevention and mitigation of hazards; spatial distribution and impact on global population. Prerequisites: GEOG 103 and senior standing or permission of instructor.

GEOG572 - Environmental Planning (3 credits)

Principles and methods used in environmental assessments and site analysis. Students will prepare an environmental impact statement, site development plan, and mine reclamation plan. Two hrs. lecture, 2 hrs. lab.

GEOG573 - Environmental Law (3 credits)

A survey of federal and state environmental laws and regulations. History and role of environmental regulation related to air and water pollution, waste disposal and resource development.

MATH570 - Mathematical Models and Applications (3 credits)

Model-building processes, the assumptions underlying mathematical models and the generation and interpretation of results from models. Theory and illustrative applications of modeling. Analyses of models constructed by students. Prerequisite: MATH 237 or permission of instructor.

MGMT510 - Leadership and Ethics (3 credits)

Utilizes self-awareness and effective social influence as a framework for individual development as leaders; examines personality, behavior, and ethics in relation to leadership effectiveness in a changing global society.

MGMT512 - Management Decision Analysis (3 credits)

Overview of management decision science. Utilizes various analytic tools and statistical techniques. Topics include data analysis, spreadsheets and statistical programs, decision theory, optimization, forecasting, regression analysis, hypothesis testing, problem solving and decision making.

MGMT621 - Foundations of Analytics (3 credits)

Introduces data analytics process and practices in business world and explains how data can be utilized in decision-making. Explores foundation of computational and quantitative methods and tools.

RECR641 - Managing Open Space Resources (3 credits)

Focus on the integration of the subsystems that comprise a resource management plan from a recreational perspective, including geology, soils, topography, vegetation, wildlife, hydrology, water quality, historical, cultural and archeological resources.

SUST 591 - Team Science Seminar (1 credit)

Team science approach to problem-solving in academic, government, non-profit, and private sectors. Development of interpersonal skills for ensuring projects and other activities that rely on a team science approach are effective, successful, and rewarding. Repeatable no more than four times for credit.

SUST 595 - Apprenticeship in Environmental Management (4 credits)

Guided work or field experience in environmental management and sustainability with an academic, governmental, non-profit, or private partner organization. Prerequisites: SUST 591, SUST 698Z, and approval of MEM program coordinator.

SUST607 - Quantitative Methods in Environmental Sciences (3 credits)

Mathematical approaches and solutions (both analytical and numerical) that cut across environmental disciplines and will introduce analytical techniques. Prerequisite: MATH 236 or equivalent.

SUST608Q - Global Climate Change (3 credits)

This course is designed to provide the student with a basic understanding of the underlying physics behind global and regional climate. Students will also gain knowledge of proxy data approaches and resources that can be used for assessing past climates, integrated and up to date knowledge of the scientific basis for understanding major drivers and components of the Earth's climate system, Information on how natural

events/phenomena and anthropogenic activities can influence regional and global climate, and a synthetic view of climate change predictions for the coming century.

SUST620 - Environment and Society (3 Credits)

Students will obtain foundational knowledge of core theories and methods that integrate cultural and socio-economic research into environmental science. Key topics include coupled natural and human systems, cultural models of the environment, social networks, ecological economics, political ecology, environmental justice, and science communication.

SUST622 - Sustainability Science: quantitative and systems approach (3 Credits)

Modern sustainability science goes beyond single-resource management and integrates biophysical and socio-economic considerations of sustainability. This course is designed to help provide students with a historical background, critical thinking approaches, and analytical tools to address sustainability from a scientific perspective.

SUST640 - Interconnected Earth Systems: Land, Ocean, and Estuary (3 Credits)

Explores the interconnected physical and biogeochemical systems of land, estuary, and ocean with cross cutting themes of human impacts and global change. Broad concepts will be combined with targeted interactive case studies to demonstrate how these systems are linked by humans, climate, and water.

SUST660 - Ecological Systems (3 Credits)

An introduction to the field of ecology is provided for matriculating graduate students and prepares them for more advanced concepts. Students will be exposed to ecology both in theory and practice through lectures, readings, and quantitative exercises, round table debates and discussions with current practitioners.

SUST 680 Cell and Molecular Biology for the Environmental Scientist (3 credits)

Introduces environmental scientists to the methods and approaches that are the foundations for today's breakthroughs in molecular and cellular biology. Detailed examination of papers published in the last few years along with online background materials will be used to reinforce the connection of key concepts to experimentation.

SUST698Y – Science for Environmental Management (3 credits)

Provides an overview of the process in which science is applied to various environmental management issues through a diversity of in-depth case studies, practitioner perspectives, lectures and projects. Techniques of synthesis and science communication are emphasized through lectures, activities, and hands-on exercises. The scientific context for environmental management is developed within historical, societal, and geographic contexts. An in-depth view of environmental management of the Chesapeake Bay and watershed is used as a recurrent theme throughout the course.

SUST 698Z – Environmental Field Methods (3 credits)

Environmental Field Methods (3 Credits)

Develops ability to measure important biological and physical parameters used to conceptualize terrestrial and aquatic environments within the socio-environmental context. Weekly lectures, discussion sessions and immersive experiences complement three multi-day field trips to learn measurement techniques, field campaign planning, sampling strategies, and field safety necessary for developing and testing questions about environmental conditions. Course exercises explore the diverse environments of Maryland, from the

Appalachian Plateau to Chesapeake Bay and coastal ocean. Meets weekly for 2 hours on Fridays plus weekend field trips.

SUST 700 - Capstone Project in Environmental Management (2 credits)

Completion of a project in environmental management or sustainability for an academic, governmental, nonprofit, or private partner organization, ideally the same organization as for SUST 595. Culminating integrative experience for students in the Master of Environmental Management program. Prerequisite: SUST 595.

Memorandum of Understanding

This Memorandum of Understanding ("MOU") is made this 12th day of October, 2022 (the "Effective Date") and is made between:

FROSTBURG STATE UNIVERSITY ("FROSTBURG"), a constituent institution of the University System of Maryland and an agency of the State of Maryland, USA.

101 Braddock Road
Frostburg, Maryland (MD) 21532
United States of America (USA)

and **University of Maryland Center for Environmental Science ("UMCES")**, a constituent institution of the University System of Maryland, and an agency of the State of Maryland, USA.

P.O. Box 775
Cambridge, MD 21613
United States of America (USA)

I. Description

This memorandum of understanding (MOU) between UMCES and FROSTBURG regarding the awarding of a joint master's degree of Environmental Management in Sustainability provides details of the program administration, including the specific responsibilities of each university and the allocation of resources between them.

II. Policies and Principles

The following principles and policies are intended to facilitate the joint awarding of MEM in Sustainability degree to graduate students under this Agreement. For purposes of this agreement and according to COMAR: "Joint degree" means a single degree offered by two or more institutions bearing the name and seal of each in which all cooperating institutions are substantially involved in required course work, faculty exchange, and shared use of facilities.

Principles:

- A. FROSTBURG and UMCES will work collaboratively to maintain and enhance the status, recognition and support of the MEM in Sustainability program throughout the USM. UMCES and FROSTBURG agree to participate in an MEM IN SUSTAINABILITY FROSTBURG/UMCES Committee to facilitate the terms of the agreement.
- B. The administration of the MEM IN SUSTAINABILITY Program will remain with FROSTBURG. Admission to MEM IN SUSTAINABILITY will be granted by the FROSTBURG Office of Graduate Services in collaboration with the Office of the Provost and respective Dean's offices, and the degree in MEM IN SUSTAINABILITY will continue to be conferred by the Office of Graduate Services.



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

TOPIC: Academic Program Proposal:
Towson University: Master of Science in Economic Analytics

COMMITTEE: Education Policy and Student Life

DATE OF COMMITTEE MEETING: Tuesday, January 10, 2023

SUMMARY: The Department of Economics in the College of Business and Economics at Towson University (TU) is proposing to launch a Master of Science in Economic Analytics. This program will teach students to combine economic methods with data analytic techniques to assess the causal impact of policies, laws, business practices, natural events, and other interventions on economic outcomes of interest. This innovative curriculum will prepare graduates for positions in the knowledge economy such as economists, analysts, or statisticians, and will help position Maryland as a State with a highly qualified and highly skilled workforce.

In enhancing access to the knowledge economy for TU's diverse student population, including racial minority groups and first-generation college students, the proposed program aligns with TU's mission as well as the goals of the 2022 Maryland State Plan for Postsecondary Education. The program also supports TU's goal of achieving R2 status as it will increase measured research activity by increasing grant opportunities and research assistants. The program leverages the strength and expertise of current departmental faculty. All courses in the program can be taught by existing faculty, and existing faculties to support the program. The program will be financially self-sustaining.

ALTERNATIVE(S): The Regents may not approve the program or may request additional 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 Committee recommend that the Board of Regents approve the proposal from Towson University to offer the Master of Science (M.S.) in Economic Analytics.

COMMITTEE RECOMMENDATION:

DATE: January 10, 2023

BOARD ACTION:

DATE:

SUBMITTED BY: Joann A. Boughman 301-445-1992

jboughman@usmd.edu



November 29, 2022

Kim E. Schatzel,
Ph.D.
President

**Office of the
President**
8000 York Road
Towson, MD 21252-
0001

Jay Perman, M.D.
Chancellor
University System of Maryland
3300 Metzert Road
Adelphi, MD 20783

Dear Chancellor Perman:

Towson University seeks your review and approval to offer a **Master of Science in Economic Analytics** in accordance with the Code of Maryland Regulations (COMAR) 13B.02.03.06.

The proposed program's innovative curriculum will prepare graduates for positions in the knowledge economy such as economist, analyst, or statistician, and will help position Maryland as a State with a highly qualified and highly skilled workforce.

If you have any questions or require additional information, please contact Rhodri Evans, Assistant Provost for Assessment, Accreditation and Compliance, at rhodrievans@towson.edu or by phone at 410-704-3312.

Thank you in advance for your review.

Sincerely,

A handwritten signature in black ink that reads 'Kim Schatzel'.

Kim Schatzel, Ph.D.
President

KS/rjme

cc: Dr. Darlene Smith, Interim Associate Vice Chancellor, Academic and Student Affairs, USM
Dr. Melanie L. Perreault, Provost and Executive Vice President for Academic and Student Affairs
Dr. Clare N. Muhoro, Associate Provost for Academic Affairs
Dr. Sidd Kaza, Associate Provost for Research and Dean of Graduate Studies
Dr. Judy Harris, Interim Dean, College of Business & Economics





UNIVERSITYSYSTEM OF MARYLAND INSTITUTION PROPOSAL FOR

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

Towson University
Institution Submitting Proposal

Economic Analytics
Title of Proposed Program

Master of Science
Award to be Offered

Fall 2023
Projected Implementation Date

2204.00
Proposed HEGISCode


45.0603
Proposed CIP Code

Economics
Department in which program will be located

Dr. Judy Harris
Department Contact

410-704-3428
Contact Phone Number

jlharris@towson.edu
Contact E-Mail Address


Signature of President or Designee

11/29/22
Date

Executive Summary

The Department of Economics in the College of Business and Economics (CBE) at Towson University (TU) is proposing to launch a Master of Science in Economic Analytics. This program will teach students to combine economic methods with data analytics techniques to assess the causal impact of policies, laws, business practices, natural events, and other interventions on economic outcomes of interest. The innovative curriculum will prepare graduates for positions in the knowledge economy such as economist, analyst, or statistician, and will help position Maryland as a State with a highly qualified and highly skilled workforce.

In enhancing access to the knowledge economy for TU’s diverse student population, including racial minority groups and first-generation college students, the proposed program aligns with TU’s mission as well as the goals of the 2022 Maryland State Plan for Postsecondary Education. The program also supports TU’s goal of achieving R2 status as it will increase measured research activity by increasing grant opportunities and research assistantships.

The program leverages the strength and expertise of current department faculty. All courses in the program can be taught by existing faculty, and existing facilities are sufficient to support the program. The program will be financially self-sustaining.

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 Master of Science (MS) Economic Analytics (EA) program will teach students to combine economic modeling and methods with data science techniques to assess the causal impact of policies, laws, business practices, natural events, and other interventions on economic outcomes of interest. The 33-credit master's program can be completed in 16 months.

Courses are grouped into foundations, methods, and impact evaluation. Foundational courses include economic theory and mathematical economics. A two-semester econometrics sequence will teach students how to do statistical analysis with a focus on impact evaluation. Students will use R and/or Stata in those courses. A two-semester sequence in computational economics and machine learning will teach students how to use Python to solve economic models; to acquire, clean, and analyze data; and to apply machine learning techniques in economics. Two courses in impact evaluation will introduce students to and teach them how to analyze current problems in economics with methods taught in other classes. Students will apply and showcase their knowledge and skills in an economics thesis.

The proposed curriculum is detailed in Table 1 below. There are 10 courses, nine of which are required. The economics thesis is a six-credit course.

Table 1: Curriculum

Required Courses (30 Credits)	
Foundations	ECON 609: Economic Theory ECON 651: Introduction to Mathematical Economics
Methods	ECON 601: Introduction to Econometrics ECON 631: Computational Economics ECON 632: Machine Learning for Economics ECON 641: Causal Inference
Impact Evaluation	ECON 560: Survey of Economic Issues ECON 643: Impact Evaluation ECON 897: Economics Thesis
Elective (three credits minimum): Any course in economics at the 500-level or above will satisfy this requirement, except ECON 690. Select courses from other TU graduate programs such as Computer Science, Supply Chain Management, or Marketing Intelligence could also satisfy the elective requirement, with consent of the Program Director.	

The proposed sequencing follows in Table 2 below.

Table 2: Recommended Sequencing

Term	Course	Credit Hours
Fall, Year 1 (12 credits)	ECON 601 Introduction to Econometrics	3
	ECON 609 Economic Theory	3
	ECON 631 Computational Economics	3
	ECON 651 Introduction to Mathematical Economics	3
January, Year 1 (3 credits)	ECON 560 Survey of Economic Issues	3

Spring, Year 1 (9 credits)	ECON 632 Machine Learning for Economics	3
	ECON 641 Causal Inference	3
	ECON 643 Impact Evaluation	3
Fall, Year 2 (9 credits)	ECON 897 Economics Thesis	6
	Elective (500-level or above)	3
Total		33

TU intends to offer an accelerated bachelor's to master's degree plan for undergraduate students at Towson. Students in this program would be able to complete the bachelor's and master's degrees in as little as five years.

The EA program will seek STEM-designation through the CIP code 45.0603 Econometrics and Quantitative Economics. This designation will signal its rigor to applicants and employers and will enable international students to take advantage of the extra optional practical training (OPT) term to benefit their job search.

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

One of Towson University's strategic goals is to achieve Carnegie Classification as an R2 Doctoral University with High Research Activity. The MS in Economic Analytics program supports this goal.

The R2 classification requires a certain level of external research funding. The EA program will be the first graduate program housed in TU's economics department. This will make economics faculty more competitive when applying for grants since applications often ask for the impact the grant will have on graduate students. Without a graduate program, TU's faculty must report no impact, and this puts their applications at a disadvantage. The R2 classification also requires a certain level of research activity. The EA program will allow for research assistant positions, which will add to the level of measured research activity.

In addition, the MS in Economic Analytics is aligned with the six goals of the TU strategic plan:

- Educate
The program offers an innovative and student-centered curriculum, emphasizing an engaging approach in which students learn to analyze data through a hands-on approach. The methods courses involve small projects where students apply learned techniques, and the thesis encourages students to integrate and apply knowledge and skills gained throughout the curriculum. Experienced and knowledgeable faculty will provide exceptional education in requisite subject areas to ensure students are well prepared to become leaders in economic analytics.
- Innovate
Faculty members teaching in the EA program maintain strong scholarship agendas, regularly publishing in top journals in the field. Faculty will seek to engage students in research through assistantships, grants, and by serving as thesis advisors.
- Engage
This program will facilitate student engagement through experiential research and learning opportunities that promote thought leadership, responsible ethics, and the ability to adapt to evolving technologies and methods. The program facilitates students' career advancement.
- Include
The EA program will likely draw many of its students from TU's existing undergraduate population. The faculty is committed to engaging a diverse student population in an equitable and inclusive way. In fact, the economics department is currently studying ways to increase the diversity of its majors and to ensure the success of underrepresented students. The department

plans to build upon this effort in the EA program so that students from diverse backgrounds are represented.

- Support

The EA program and its students will be of central importance to the faculty as it will be the first graduate program and is vital in achieving the goals of the department, college, university, and the State of Maryland. The faculty will be committed to student success through close mentoring and advising.

- Sustain

The program will responsibly and sustainably employ financial, human, and environmental resources. The program is designed to be financially self-sustaining. Faculty will be supported through new assistantships, new faculty lines, and other measures. The program will have little to no adverse impact on the environment. In fact, it may have a beneficial effect on the environment since sustainability issues may very well be a topic in courses or related to research.

3. Provide a brief narrative of how the proposed program will be adequately funded for at least the first five years of the program implementation.

The main expense for the program will be up to two new faculty lines within the first five years. Other expenses include operating and marketing expenses. The program will not require any capital expenses. These expenses will be funded through tuition from students in the program. Details are provided in section L.2.

4. Provide a description of the institution's commitment to: (a) ongoing administrative, financial, and technical support of the proposed program (b) continuation of the program for a period of time sufficient to allow enrolled students to complete the program.

The proposed MS in Economic Analytics program has the necessary support at the department, college, and institutional level to operate successfully. The economics department that will house the degree is well-established at TU, with an existing cadre of full-time tenured/tenure-track faculty available to teach in the program (see section I.1, Table 7 for a listing of faculty who will teach in the program) and administrative support personnel. While all courses in the program can be taught by existing faculty, the department intends (with the college and central administration's endorsement) to hire two additional faculty positions by year three to help implement the program (see sections I.1 and L.2 for further details), which serves as evidence of TU's commitment to ensuring the success of the EA program.

As outlined in sections K and L.2, TU is confident that the existing administrative and technical supports and physical facilities available to the department and college as a whole are sufficient to ensure the program's viability – the department is not seeking any capital investments or specialized facilities, since current classroom/office space in CBE will suffice, nor is it seeking any additional administrative positions or technology supports to deliver the program. At the institutional level, the Office of Technology Services is able to provide comprehensive technical assistance to faculty and students. Beyond the two new faculty positions mentioned, the program has allocated some expenditures for library and marketing expenses, but otherwise no additional expenditures are needed. TU anticipates that the program will be financially self-sustaining and thus it has the full support of the university administration.

TU is committed to student success and will provide all enrolled students with the necessary courses and resources (such as advisors to guide students through the program) so they can graduate on schedule.

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 (b) societal needs, including expanding educational opportunities and choices for minority and educationally disadvantaged students at institutions of higher education (c) The need strengthen and expand the capacity of historically black institutions to provide high quality and unique educational programs.**

The MS in Economic Analytics modernizes the economics curriculum, thereby addressing the need for advancement and evolution of knowledge. In the past half-century, economics has pushed the envelope in terms of the statistical analysis of data in the social sciences, especially regarding causal inference. This subfield of economics is called econometrics. Many econometric techniques have been adopted by other social science researchers. Recently, data science methods such as machine learning have seen increased application in economic research, yet these methods have yet to be widely integrated into the economics curriculum. This program aims to help fill that need. These new methods will enable students and practitioners to expand and deepen their understanding of key economic, business, and social issues.

The MS in Economic Analytics will be important in meeting the demands and needs of the region and State regarding careful data analysis in an economic context. Graduates of the program will be well-suited for jobs as economists, economic analysts, data analysts, quantitative analysts, or statisticians. Moreover, employers are increasingly looking for applicants with knowledge of both econometrics and data science methods. While only anecdotal, casual browsing of job postings for economists indicates that employers increasingly list knowledge of data science methods as a required or desired trait. The program will provide students with highly marketable skills, and Maryland with a more highly skilled workforce. This will be attractive to existing employers and employers considering locating in the State.

Finally, it is anticipated that many students in the program will have been TU undergraduates. The university's undergraduate student population closely mirrors that of the State of Maryland. It is well-known that TU has no achievement gap between students from minority groups and the general student population. In addition, the university enrolls a significant population of first-generation students (accounting for 22 percent of the 2021 entering freshmen class). This program will increase access to high quality graduate level education and expand educational opportunities and choices for minority and educationally disadvantaged students in Maryland.

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

The proposed MS in Economic Analytics program is consistent with the Student Success goal outlined in the new 2022 Maryland State Plan for Higher Education to “promote and implement practices and policies that will ensure student success.” As outlined in section B.1 and elsewhere in the proposal, the degree will prepare graduates to work in careers (e.g., as economists, analysts, statisticians, etc.) for which there is market demand for highly-trained experts, including for most of the sectors that the Maryland Department of Commerce identifies as key industries for Maryland, such as financial services, military and federal, cybersecurity and IT, distribution and logistics, advanced manufacturing, etc. (see p.46 of the State Plan). Consequently, the program directly aligns with one of the priorities (Priority 5) to “maintain the commitment to high-quality postsecondary education in Maryland” that underpins the Student Success goal.

As indicated above, the program's focus on data science and econometrics further addresses the Priority 5 action item by identifying “innovative fields of study.” Additionally, the program supports the “real world experience” emphasized under Priority 5 by providing students with long-term

graduate education opportunities while considering a student's career trajectory. The curriculum will emphasize a "learning-to-learn" approach. Not only will students acquire knowledge, skills, and abilities that will benefit them in their first job, but they will also be equipped to learn emerging technologies and methods after graduation. Students will also sharpen their critical thinking and communication skills, while the thesis requirement will increase the quantity of student-generated research. These life-long learning skills endow students with the flexibility to adjust to future needs of the economy of Maryland.

Moreover, the EA program will advance pedagogical training opportunities for graduate students, which is another strand of Priority 5, by allowing the home department to pursue grant funding for research and teaching assistant positions, neither of which the department currently has. Grant applications from certain organizations are evaluated in part for their impact on graduate students. The economics department currently has no graduate program, putting TU at a disadvantage. The establishment of the MS in Economic Analytics program will enable department faculty to incorporate and articulate an impact on graduate students when applying for grants, thus increasing the competitiveness of grant applications from economics faculty and, through these grant awards, helping to improve scholarship productivity and enhanced research opportunities for students.

The MS in Economic Analytics program also supports Priority 6 ("to improve systems that prevent timely completion of an academic program") embedded within the Student Success goal by promoting an accelerated bachelor's to master's degree pipeline, saving time and money. Undergraduate students at Towson will be able to apply nine credits of graduate-level work towards both the undergraduate economics major and the MS in Economic Analytics. Students enrolled in the program could thus earn a bachelor's and master's degree in as little as five years.

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 for graduates of the proposed program.

The EA program will prepare students for employment in a variety of occupations, but primarily as economists, statisticians, or data scientists. While a few jobs in these occupations only require a bachelor's degree, most entry-level positions require a master's degree. A sample of job titles includes economist, economic analyst, business analyst, data analyst, quantitative analyst, and statistician. Table 3 shows the industries that employ these workers and provides salary data. The median salary in each of these occupations is well above the median across all occupations. Graduates of the program will have high earning potential.

Table 3: Largest Employers and Median Salary of Occupations Associated with the Economic Analytics Program

Occupation	Employer	Fraction	Median Salary
Economist ¹	Federal government, excluding postal service	25%	\$125,950
	Management, scientific, and technical consulting services	17%	\$117,510
	Scientific research and development services	14%	\$101,910
	State government, excluding education and hospitals	11%	\$82,220
	Finance and insurance	7%	\$163,640
Statistician ²	Research and development in the physical, engineering, and life sciences	14%	\$114,770
	Federal government	12%	\$114,050
	Healthcare and social assistance	9%	\$83,820
	Insurance carriers and related activities	8%	\$79,060
	Colleges, universities, and professional schools; state, local, and private	7%	\$77,750
Data Scientist and Business Intelligence Analyst ^{3,4}	Not Available		\$100,910
Total, all occupations ¹			\$45,760

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

This will be discussed in combination with item C.3.

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.

According to the Bureau of Labor Statistics, national employment in 2020 across these three occupations (economist, statistician, and data scientist), measured in number of employees, was 123,800. By 2030, this is projected to grow by 20 percent to 148,200. This far exceeds the projected growth rate of eight percent across all occupations. Table 4 breaks down these data by occupation. The employment growth rate in each occupation is projected to far exceed the average. The demand for graduates of the program is also strong.

Increased demand for statisticians, economists, and data scientists is driven by increasing availability of big data collected from social media, smartphones, and other online activity.^{1,2} The increasing complexity of the global economy and a more competitive business environment also are expected to support demand for economists.¹

¹ Bureau of Labor Statistics, U.S. Department of Labor, *Occupational Outlook Handbook*, Economists, retrieved from <https://www.bls.gov/ooh/life-physical-and-social-science/economists.htm> (accessed August 24, 2022).

² Bureau of Labor Statistics, U.S. Department of Labor, *Occupational Outlook Handbook*, Mathematicians and Statisticians, retrieved from <https://www.bls.gov/ooh/math/mathematicians-and-statisticians.htm> (accessed August 24, 2022).

³ Occupational Information Network (O*NET), U.S. Department of Labor, Data Scientists, retrieved from <https://www.onetonline.org/link/summary/15-2051.00> (accessed August 24, 2022).

⁴ Occupational Information Network (O*NET), U.S. Department of Labor, Business Intelligence Analyst, retrieved from <https://www.onetonline.org/link/summary/15-2051.01> (accessed August 24, 2022).

Table 4: Projected Employment Growth within Occupations Associated with the Economic Analytics Program

	National Employment, 2020	Projected Employment, 2030	Projected Percent Change in Employment, 2020-30
Economists ¹	18,600	21,000	13%
Statisticians ²	42,000	56,900	35%
Data scientists and mathematical science occupations, all other ³	63,200	70,300	15%
Grand Total	123,800	148,200	20%

At the State and regional level (taken to encompass Maryland, the District of Columbia, and Virginia), most economists are employed in the District of Columbia, while most statisticians are employed in Maryland. TU expects that most of the demand for graduates of the program will arise from Maryland, the District of Columbia, and northern Virginia.

According to the Occupational Information Network (O*NET), a project funded by the Bureau of Labor Statistics, regional employment in occupations associated with economic analytics will grow from 17,930 in 2018 to 20,830 in 2028. This is an increase of 2,900 jobs and translates to a growth rate of 16 percent. O*NET projects that there will be 2,070 annual job openings by 2028. Within Maryland, employment in the Economist and Statistician occupations is projected to increase by 1,020 positions between 2018 and 2028 (from 4,840 to 5,860) which translates to a growth rate of 21 percent. Projected annual job openings within Maryland is 850.

Table 5: Regional Employment Outlook for Occupations Associated with the Economic Analytics Program

Occupation	State	Base Employment (2018)	Projected Employment (2028)	Growth Rate	Projected Annual Job Openings
Economist ⁵	Maryland	940	990	5%	130
	District of Columbia	8,900	9,840	11%	780
	Virginia	<u>1,310</u>	<u>1,430</u>	<u>9%</u>	<u>110</u>
	Subtotal (Economists)	11,150	12,260	10%	1,020
Statistician ⁶	Maryland	3,900	4,870	25%	720
	District of Columbia	1,580	2,000	27%	180
	Virginia	<u>1,260</u>	<u>1,660</u>	<u>32%</u>	<u>150</u>
	Subtotal (Statisticians)	6,740	8,530	27%	1,050
Grand Total		17,930	20,830	16%	2,070

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

Maryland currently offers six master's degrees in the economics-related field across four universities. These programs graduated roughly 250 students per year between 2016 and 2019 according to trend data from MHEC (see Table 6). This is a quarter of the 1,020 projected regional job openings for economists alone (see Table 5).

⁵Occupational Information Network, Economists, retrieved from <https://www.onetonline.org/link/summary/19-3011.00> (accessed August 24, 2022).

⁶Occupational Information Network, Statisticians, retrieved from <https://www.onetonline.org/link/summary/15-2041.00> (accessed August 24, 2022).

Other regional universities outside Maryland with significant master's programs include George Washington University, American University, Georgetown University, and George Mason University. While degree award data is not readily available for these other institutions,⁷ using Maryland data as a comparative baseline, it appears likely that at the regional level there is a shortage of master's level economists.

Table 6: Supply of Graduates from Comparable Maryland Programs

Institution	Program Name (CIP code)	Degrees Awarded in Similar Programs					
		2014	2015	2016	2017	2018	2019
UMBC	Economic Policy Analysis (45.0603)	9	4	6	4	6	4
UMCP	Agricultural & Resource Economics (01.0103)	10	8	5	7	6	1
UMCP	Economics (45.0601)	13	15	23	12	14	11
Morgan State	Economics (45.0601)	1	1	1	5	4	8
JHU	Applied Economics (45.0603)	121	135	136	175	166	187
JHU	International Economics and Finance (45.0603)	0	0	69	64	70	39
Total		154	163	240	267	266	250

Source: MHEC Trends in Degrees and Certificates by Program

D. Reasonableness of Program Duplication

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

The MS in Economic Analytics will adopt the CIP code 45.0603. Table 6 identifies six similar programs. While there are some similarities, the EA program at TU would not duplicate any of them (a detailed analysis of how Towson's proposed MS degree differs from other program offerings in the State is provided below). Moreover, to the extent that there is overlap between the programs, the market analysis above indicates a looming shortage of master's level economists produced by Maryland institutions.

University of Maryland, Baltimore County (UMBC): Master of Arts in Economic Policy Analysis

The UMBC program is targeted towards students seeking careers in the public sector, especially those interested in policymaking and implementation. In fact, this program is a joint program between UMBC's economics and public policy departments. The core curriculum is divided into an economics core and a public policy core.

In contrast, Towson's EA program is targeted towards students seeking careers in the private sector. To this end, the program requires classes in computational economics (including machine learning), in which students develop programming skills applied to economic problems, a skill which is highly valued in today's marketplace for economists. No courses in public policy are required.

Finally, a full-time student in the TU program will typically finish the degree requirements in 16 months, while the UMBC program is a two-year program.

⁷According to the State Council of Higher Education for Virginia, annual enrollment in the George Mason University's master's level economics program is around 110. Assuming half of enrolled students graduate each year, this means that George Mason University produces about 55 master's level economics students. Retrieved from <https://research.schev.edu/> (accessed 8/24/2022).

University of Maryland, College Park (UMCP): MS in Agricultural and Resource Economics

This UMCP program is a 33-credit program targeted to students interested in agricultural economics, environmental and natural resource economics, and development economics. Students in this program learn specialized mathematical and statistical methods specifically designed to address problems in these sub-fields.

The TU program will not cover some of these specialized methods, especially those which are relevant for agricultural, environmental, and natural resource economics. In addition, the TU program requires courses in computational and data science methods, which the UMCP program does not.

Finally, a full-time student in the TU program will typically finish the degree requirements in 16 months, while this UMCP program is a two-year program.

UMCP: MS in Applied Economics

The UMCP Applied Economics program targets working professionals with evening and online classes. No thesis is required, and the program does not offer courses in computational economics or machine learning.

In contrast, the TU program will offer classes primarily in a face-to-face format during the day. A thesis, computational economics, and machine learning are required. Finally, a full-time student in the TU program will typically finish the degree requirements in 16 months, while this UMCP program is a two-year program.

Morgan State University: Master of Arts in Economics

The Morgan State program is a 30-credit general master's of economics program. As such, the 12-credit core includes a course in macroeconomic theory, which the TU program does not. Students in the Morgan State program may select from a wide variety of courses, many of which are not offered at TU, to satisfy the 15-credit elective requirement.

In contrast, the TU program has a 24-credit core and only three credits of electives, so it is more restrictive. On the other hand, the TU program offers two courses in computational economics and a data science angle, which is not available at Morgan State. Finally, a full-time student in the TU program will typically finish the degree requirements in 16 months, while the Morgan State program is a two-year program.

Johns Hopkins University (JHU): MS in Applied Economics

This program is completed in 12-24 months and is delivered online and face-to-face. A thesis is optional. This program offers students several focus areas, including applied macroeconomics, applied microeconomics, financial economics, and quantitative methods.

The TU program is completed in 16 months and is delivered primarily face-to-face. A thesis is required. The TU program offers students fewer elective courses, but may be more suitable for students seeking to combine economic methods with emerging data science techniques.

JHU: Master of Arts in International Economics and Finance

The JHU program is a cohort-based program completed over 11 months. The curriculum focuses on international finance, international trade, and macroeconomic themes. A capstone project is required, but a thesis is not.

In contrast, the TU program is completed over 16 months and has a greater focus on microeconomics and data analysis. The TU program is again distinguished by its data science angle through the computational economics and machine learning for economics courses.

2. Provide justification for the proposed program.

The TU program will help meet the needs of employers in the region by training graduates with in-demand knowledge, skills, and abilities. As documented in section C above, demand for master's level economists exceeds the supply in the region, and the TU program will help fulfill this need by increasing supply.

Moreover, data science and machine learning techniques are increasingly being applied in research by academic economists, and job postings often express a preference for candidates with these skills. Master's programs in the economics field in Maryland have yet to fully integrate these techniques in the curriculum, a gap which the TU program will fill with its required two-course sequence in computational economics and machine learning.

TU anticipates that many of the program's students will have previously been Towson undergraduates. Towson has a strong track record of supporting student success in underrepresented populations such as first-generation college students. By offering a master's degree option, and especially an accelerated bachelor's to master's degree program, the program will increase access to the knowledge economy. This will help reduce inequality in Maryland by increasing intergenerational socioeconomic mobility and increasing the tax base.

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.

Only Morgan State University has a similar program among HBIs, but with 20 graduates in the 6-year period between 2014 and 2019 (see Table 6), this is more of a specialized program rather than a high-demand program. The differences between the Morgan State University program and the TU program were noted in section D.

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.

As outlined in section E, given the specialized subject-area and graduate-level focus of the proposed EA program, TU does not anticipate that its implementation will have a significant impact on the uniqueness and institutional identities and missions of HBIs.

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

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

The Economic Analytics program was developed by the faculty in the TU economics department as a response to the needs of students, faculty, the university, and the profession. The department has long thought it would be beneficial to give Towson's current undergraduate majors an opportunity to complete a master's degree in the economics field at TU. The MS in Economic Analytics achieves that goal.

Moreover, the faculty in the department view this program as an opportunity to increase scholarship and engagement. A graduate program will increase the competitiveness of grant applications, provide a potential source of teaching and research assistants, and allow faculty to teach methods and topics that are closer to those used in their own research. A master's program should also help the

department recruit highly qualified faculty in future searches. Additionally, the program will help Towson University meet its goal of achieving R2 status by increasing graduate enrollments and scholarship activity.

The program also responds to the needs of the profession. Programming and machine learning skills are increasingly in demand, and few programs emphasize these skills. The EA program fills this gap.

The economics faculty developed the curriculum in a deliberative process over several years. Different versions of the program were discussed as possibilities, but the EA program was the clear winner since it leverages the strengths of existing faculty, the courses in the program can be taught by existing faculty, and it provides students with an innovative and impactful curriculum.

The program will be overseen by a Program Director and the Chair of the economics department. Both positions are held by full-time economics faculty with a Ph.D. The Program Director, in coordination with the Chair, is responsible for the leadership, management, administration, and admissions for the program. In addition to this formal role, additional faculty support the curricular, pedagogical, and advising needs of the students.

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

The educational objective of the program is to teach students to combine economic methods with data analytics techniques to assess the causal impact of policies, laws, business practices, natural events, and other interventions on economic outcomes of interest. Program learning outcomes are as follows. Graduates of the EA program will:

1. Understand foundational economic concepts and the language of economic analysis.
2. Effectively use existing and emerging technology for economic analysis.
3. Appropriately choose between alternative analytical techniques and research methodologies for a given task.
4. Combine economic models and methods with data science techniques to assess the causal impact of laws, policies, business practices, natural events, and other interventions on economic outcomes of interest.
5. Have the skills necessary to comprehend published economic research papers and to integrate the implications of published research into their own studies.
6. Effectively communicate the results of independent research and analysis.

Many of the concepts, skills, and technologies in this program are best learned in an in-person, collaborative environment with a hands-on approach. For this reason, the program will be primarily face-to-face.

3. Explain how the institution will: (a) provide for assessment of student achievement of learning outcomes in the program (b) document student achievement of learning outcomes in the program.

Student learning outcomes will be assessed in a variety of ways. Faculty will design and evaluate assignments that assess one or more of the program's learning outcomes. The students' thesis will also be evaluated in the context of the program objectives and learning outcomes. Assessment results will be recorded, archived, and tracked over time by the Program Director. The results will be disseminated to the economics faculty and considered in future curriculum and course development in a way that is consistent with best practices.

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

A minimum of 33 credit hours is required. These include 24 credit hours of required core economics courses, an elective course that is a minimum of three credits, and a six-credit thesis requirement.

Core Courses

9 courses (30 credits hours):

- *ECON 560: Survey of Economic Issues*
- *ECON 601: Introduction to Econometrics*
- *ECON 609: Economic Theory*
- *ECON 631: Computational Economics*
- *ECON 632: Machine Learning for Economics*
- *ECON 641: Causal Inference*
- *ECON 643: Impact Evaluation*
- *ECON 651: Introduction to Mathematical Economics*
- *ECON 897: Economics Thesis*

Elective

1 course (3 credit hours, minimum): Any economics graduate course at the 500-level or above may be used to satisfy this requirement, except ECON 690. Other graduate courses at the 500-level or above may also be used with consent of the Program Director. Some possibilities include: AIT 600, COSC 501, COSC 578, COSC 581, EBTM 720, MKTG 610, MKTG 780, MTH 631, MTH 634, and MTH 645.

The recommended course sequencing is outlined in Table 2. The course descriptions follow below.

ECON 560: Survey of Economic Issues (3)

A non-technical introduction to applied economic issues from the recent academic literature. Specific topics will vary by semester. Prerequisite: Graduate Standing.

ECON 601: Introduction to Econometrics (3)

The problem of testing economic theories against empirical data; the formulation and estimation of regression models; the use of the method of multiple regression in testing the various hypotheses of economic theories; serial correlation; the problem of identification; application of simultaneous equation model; the use and construction of econometric models for forecasting and policy making. Prerequisite: Program admission.

ECON 609 Economic Theory (3)

Consumer theory. Theory of the firm. Perfectly and imperfectly competitive markets. Economics of information. The connection between economic theory and empirical analysis. Prerequisite: Program admission.

ECON 631: Computational Economics (3)

Introduction to programming concepts and analysis of applied economic models using numerical methods. Procedural programming; functions; visualization; data mining; root finding algorithms; minimization routines; dynamic models. No prior programming skills required. Prerequisite: Program admission.

ECON 632: Machine Learning for Economics (3)

Introduction to machine learning concepts and data analysis techniques with a focus on applications from Economics using the Python programming language. Prerequisite: ECON 631.

ECON 641: Causal Inference (3)

An introduction to econometric methods used for causal inference. Using the potential outcomes framework, we discuss methods directed towards understanding causality using the techniques of randomized experiments, matching, instrumental variables, machine learning for causality, difference-in-differences, synthetic control methods, and regression discontinuity. Prerequisite: ECON 601.

ECON 643: Impact Evaluation (3)

Determination of the causal effect of interventions by carefully understanding attribution and the practical applications of methodologies. We discuss why and how different methods can produce a valid estimate of the impact of an intervention, how to select the appropriate method for the context, and their main limitations. The course is organized around specific examples from the scientific literature. Prerequisite: ECON 601

ECON 651: Introduction to Mathematical Economics (3)

A study of the fundamental mathematical methods widely used in economics: calculus and linear algebra. Emphasis is on optimization theory; economic examples are used throughout. Prerequisite: Program admission.

ECON 897: Economics Thesis (6)

Original research in economics using acceptable design and methodology. Supervised by one or more faculty members. Prerequisite: Consent of Program Director.

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

Not applicable since this is a graduate program.

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

None.

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

Not applicable.

8. Provide assurance and any appropriate evidence that the proposed program will provide students with clear, accurate, 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 curriculum and proposed sequencing will be posted on the program website and will be available in the graduate catalog. Graduate tuition is published on the university website. In addition, the Program Director will provide incoming students an orientation where the following topics will be discussed:

- Curriculum.
- Requirements for timely completion of the degree.
- Expectations regarding faculty/student interaction and student/student interaction.
- Opportunities for engagement outside the classroom.
- Availability of academic support services and financial aid resources.

Continuing students will be provided with regular and timely advising services by program faculty and the Program Director.

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.** Advertising, recruiting, and admissions materials will clearly and accurately represent the proposed program and the services available. This will be ensured by direct communication between the Program Director and university marketing and admissions staff. Expectations for background in economics, mathematics, and technological savvy will be clearly stated in promotional materials and direct communications.

H. Adequacy of Articulation

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

Not applicable.

I. Adequacy of Faculty Resources

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 faculty member will teach in the proposed program.**

The EA program faculty are all tenured/tenure-track and full-time members in the economics department. They possess expert knowledge in their specialized fields, and regularly publish academic research in high-quality, peer-reviewed outlets in economics. In fact, the seven faculty members listed in Table 7 below have published more than 45 articles in peer-reviewed journals since 2017. These journals include *Journal of Public Economics*, *Journal of Economic Behavior and Organization*, *Economic Theory*, *Health Economics*, *European Economic Review*, *International Journal of Industrial Organization*, *International Journal of Forecasting*, *World Development*, *Econometric Reviews*, *Journal of Economic Dynamics and Control*, *Journal of Human Capital*, *Economics Letters*, and *Economic Inquiry*, among others.

Faculty members have also supervised many undergraduate research projects, some of which resulted in peer-reviewed publications co-authored with these students. The faculty will be able to provide high quality thesis advising for master's students.

While existing faculty can cover the courses in the EA program, this will pull them away from current teaching responsibilities. Consequently, the department will need two additional faculty members within the first five years to support the program. TU has identified adequate faculty members to meet the demands of the program and propose the allocation of courses below. Students will select an advisor for their thesis requirement, ECON 897 Economics Thesis, from among the program faculty.

Table 7: Master's Program Faculty

Faculty Member	Degree	Rank	Status	Planned Course Assignments
Shantanu Bagchi	Ph.D. in Economics (Utah State University)	Associate Professor	Full-time	ECON 651: Introduction to Mathematical Economics
Chris Boyd	Ph.D. in Applied Economics (University of Minnesota)	Assistant Professor	Full-time	ECON 643: Impact Evaluation
Finn Christensen	Ph.D. in Economics (Cornell University)	Professor	Full-time	ECON 609: Economic Theory
Seth Gitter	Ph.D. in Agricultural and Applied Economics (University of Wisconsin)	Professor	Full-time	ECON 560: Survey of Economic Issues
Juergen Jung	Ph.D. in Economics (Indiana University)	Professor	Full-time	ECON 631: Computational Economics ECON 632: Machine Learning for Economics
Vinish Shrestha	Ph.D. in Economics (Emory University)	Associate Professor	Full-time	ECON 641: Causal Inference
Yongchen Zhao	Ph.D. in Economics (SUNY–Albany)	Associate Professor	Full-Time	ECON 601: Introduction to Econometrics

2. Demonstrate how the institution will provide ongoing pedagogy training for faculty in evidence-based best practices, including training in: (a) Pedagogy that meets the needs of the students (b) The learning management system (c) Evidence-based best practices for distance education, if distance education is offered.

TU provides faculty with an abundance of resources related to evidence-based best practices in teaching. These resources, available for faculty across all ranks and titles, are available through the Office of the Provost and also, for economics faculty, through CBE.

The [Faculty Academic Center of Excellence at Towson \(FACET\)](#), a unit under the Office of the Provost, serves as a catalyst and model for using effective learning approaches that have the potential for transforming the quality of the academic experience for faculty and students. Dissemination of information is available through in-person and online delivery methods in the form of special events, workshops, and seminars. The numerous and varied presentation topics provide insight and practical suggestions on effective teaching and learning at the university level.

In particular, FACET promotes an “on-demand” approach to pedagogical training, in which teaching resources are provided based on a recent needs assessment survey of faculty. Current areas in which all faculty can obtain readily accessible best practice teaching tools/pedagogical training include:

- Strategies for student engagement.
- Facilitating group work.
- Supporting students for success.
- The Scholarship of Teaching and Learning (SoTL): Guide to understanding and doing SoTL (Vanderbilt University).
- Open Educational Resources (OERs): Guide to finding, adapting, creating, and using OERs (Maryland Open-Source Textbook Initiative).
- Universal Design for Learning (UDL).

At the college-level, CBE provides professional development support for faculty through conference travel as well as faculty development offerings throughout the academic year. Faculty self-select attendance at professional, university, and college workshops. At the departmental level, the economics department provides a mentorship program for faculty specific to teaching through peer review and one-to-one interaction (i.e., faculty mentor to instructor).

Additionally, both FACET and TU's Office of Technology Services provide comprehensive training and technical assistance to faculty in support of the university's learning management system (LMS), Blackboard, which is a long-standing and widely utilized LMS. Faculty can draw upon a broad range of resources and undertake training on teaching best practices and pedagogy in relation to Blackboard regardless of whether they are teaching face-to-face, hybrid, and fully online courses.

J. Adequacy of Library Resources

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

The library resources available will be adequate for meeting the needs of EA students as these resources are already available for economics faculty and students. Cook Library on the campus of TU houses an extensive collection of EA-related materials, including print and electronic books, online government documents, and a compilation of scholarly journals (print and electronic). The library provides access to over 20 economics-relevant databases such as EconLit, NBER, Business Source Complete, JSTOR, and SpringerLink.

Faculty and students can access the databases, catalogs, e-book content, and electronic journals from any location on campus through TU's secure wireless network as well as remotely through the Cook Library web page. Comprehensive lists of databases, electronic reference books, and journals in all formats are available through the Cook Library web page.

In addition to Cook Library, faculty and students have access to materials through reciprocal agreements at nearby Baltimore institutions as well as across the University System of Maryland and affiliated institutions (e.g., UMCP; UMBC). Further, Cook Library also provides access to resources in other libraries across the country. These materials can be requested for loan through standard interlibrary loan (ILL) services. As part of this service, faculty and students have access to RAPID ILL, a service customary at high research activity institutions. The current turnaround time for article requests is typically less than 48 hours.

While library resources are adequate, the program would benefit from access to newly published articles from select journals. For this reason, the budget includes some library funds.

K. Adequacy of Physical Facilities, Infrastructure, and Instructional Equipment

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 EA program will not require specialized facilities or infrastructure. Existing classroom and office space is adequate. The program will be located predominantly in Stephens Hall on the main TU campus, which houses the economics department and the rest of CBE. Most classrooms are outfitted with teaching technologies that facilitate live lecture streaming and recording, including the ability for remote students to actively participate in class. Classrooms additionally feature multi-paneled whiteboards, document cameras, and ceiling-mounted display projectors which project the instructor's computer screen. Stephens Hall also has classrooms that are computer labs, which facilitates teaching courses that require hands-on computer instruction. There is also a computer lab in Stephens Hall for student use.

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.**

This is not applicable since the program and all classes are face-to-face.

L. Adequacy of financial resources with documentation

1. Resources and Narrative Rationale.

Table 8 below lays out the program resources. The primary source of resources comes from graduate tuition. A rationale for each category and an explanation of the numbers follows the table.

Table 8: Program Resources, First Five Years

Resource Categories	Year 1	Year 2	Year 3	Year 4	Year 5
1. Reallocated Funds	\$0	\$0	\$0	\$0	\$0
2. Tuition/Fee Revenue	\$178,848	\$273,637	\$330,280	\$381,962	\$442,839
a. Number of Credit Hours	240	360	426	483	549
b.i. In-state Credit Hour Rate	\$642	\$655	\$668	\$681	\$695
b.ii. Out-of-state Credit Hour Rate	\$1,158	\$1,181	\$1,205	\$1,229	\$1,253
c. Total Revenue	\$178,848	\$273,637	\$330,280	\$381,962	\$442,839
3. Grants, Contracts & Other External Sources	\$0	\$0	\$0	\$0	\$0
4. Other Sources	\$0	\$0	\$0	\$0	\$0
Total (Add 1-4)	\$178,848	\$273,637	\$330,280	\$381,962	\$442,839

Reallocated Funds

No funds will be reallocated to support this program.

Tuition Revenue

At TU, graduate tuition is charged by credit hour rather than by full-time status, so tuition is based on a credit hour approach.

- *Credit Hours*
 Credit hours are based on the expected number of incoming students and the course sequencing given in Table 2. A typical student in the program will take 24 credit hours in their first year and nine credit hours in their second year. The calculations assume that Year 1 enrollment is 10 students, Year 2 enrollment is 12 students, and so on, until enrollment reaches a target of 18 students by Year 5. The projected numbers allow for an attrition rate of approximately 20 percent. That is, 20 percent of the students enrolled in their first year will leave the program by their second year.

Table 9: Credit Hour Calculation

Year	First Year Students	Continuing Students	Credit hours
1	10	0	240
2	12	8	360
3	14	10	426
4	16	11	483
5	18	13	549

- Credit Hour Rate*
 The in-state tuition rate for AY2022-23 is \$642/credit and the out-of-state tuition rate is \$1,152/credit. The calculations assume that there will be a two percent increase in the tuition rate annually.
- Total Revenue*
 Consistent with other graduate programs in CBE, it is assumed that 80 percent of students are in-state and 20 percent are out-of-state. As an example, revenue in Year 1 is calculated as $240 * (.8 * \$642 + .2 * \$1,158) \approx \$178,848$.

Grants, Contracts, and Other External Sources

While the program should make faculty grant applications more competitive, the program will not rely on grants as a regular source of funds.

Other Sources

No other sources of revenue are anticipated in the near term.

2. Program Expenditures and Narrative Rationale.

Table 10 below lays out expected program expenditures for the first five years. A rationale for each category is provide below the table.

Table 10: Program Expenditures, First Five Years

Expenditure Category	Year 1	Year 2	Year 3	Year 4	Year 5
1. Faculty (b + c below)	\$151,770	\$151,680	\$308,149	\$317,394	\$326,915
a. Number of FTE	1.17	1.17	2	2	2
b. Total Salary	\$109,000	\$109,000	\$218,545	\$225,102	\$231,855
c. Total Benefits	\$42,770	\$42,680	\$89,604	\$92,292	\$95,060
2. Admin. Staff (b + c below)	\$0	\$0	\$0	\$0	\$0
a. Number of FTE	0	0	0	0	0
b. Total Salary	\$0	\$0	\$0	\$0	\$0
c. Total Benefits	\$0	\$0	\$0	\$0	\$0
3. Support Staff (b + c below)	\$0	\$0	\$0	\$0	\$0
a. Number of FTE	0	0	0	0	0
b. Total Salary	\$0	\$0	\$0	\$0	\$0
c. Total Benefits	\$0	\$0	\$0	\$0	\$0
4. Technical Support and Equipment	\$0	\$0	\$0	\$0	\$0
5. Library	\$6,500	\$6,695	\$6,896	\$7,103	\$7,316
6. New or Renovated Space	\$0	\$0	\$0	\$0	\$0
7. Other Expenses (Program Director, Marketing)	\$12,000	\$12,360	\$12,731	\$13,113	\$13,506
TOTAL	\$170,270	\$170,735	\$327,776	\$337,610	\$347,737

Faculty

Excluding the elective course, the EA program has eight required courses, plus a thesis. In Years 1 and 2, when enrollment is expected to be small, three of these courses will be cross-listed with existing undergraduate courses. For the five remaining new courses, the department will require one new faculty member in Years 1 and 2 and an adjunct to cover a lower-level undergraduate course to facilitate scheduling. By Year 3, enrollment is anticipated to be sufficient to offer separate undergraduate and graduate sections of the courses cross-listed in Years 1 and 2. The economics department will then require a second faculty member to help staff these courses, but an adjunct will no longer be required.

The table assumes a salary of \$103,000 for a new faculty member (FTE=1) in Year 1 with a 3 percent annual growth rate and 41 percent in benefits. An adjunct teaching one course (FTE=.17) receives \$6,000, plus 9 percent in benefits. In Year 3, a second faculty member will be hired at the same salary as the first, and the adjunct is no longer needed (FTE=2).

Library

These funds will be used to purchase subscriptions to one or two select journals to allow access to newly published articles. This expense grows at three percent per year.

Other expenses

These funds are for a stipend for a Program Director and marketing. This expense grows at three percent per year.

M. Adequacy of provisions for evaluation of program

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

Course evaluation begins during the initial development of the course in the curricular review process.

Course proposals are evaluated for:

- Appropriateness of course difficulty and workload.
- Effective assessment and grading practices in the course.
- Course syllabus consistency with the guidelines established by TU, which reflect best practices in course development.

These elements of a course are reviewed by the department, the CBE Curriculum Committee, and the University Curriculum Committee. The primary focus at the department level is to ensure course content accuracy and program alignment, the focus at the college and university level is to facilitate the production of quality course proposals. In addition, college and university level review includes addressing any resource issues, determining if conflicts exist between departments/colleges.

Ongoing evaluation of courses takes place primarily in two ways, namely review by economics faculty and student evaluation. The faculty reviews courses taught on an annual basis to determine strengths and concerns related to a course as well as to make sure that the content identified in the course syllabus is being covered. If a review indicates concerns or problems with a course, faculty work to develop strategies for addressing/rectifying problems. Student evaluation of courses takes place at the end of every semester. Using a tool developed by TU faculty that allows for quantitative and qualitative feedback, students can assess instructor performance (e.g., ability to communicate clearly; quality of student- instructor interaction; preparedness). Students are not involved in evaluating the adequacy, relevance, and timeliness of course content. However, students can comment on the “things liked about a course,” suggest “improvements” for a course, and recommend the course to others.

Faculty Evaluation

Evaluation of faculty takes place using policies and procedures established by TU’s promotion, tenure/reappointment and merit committees and associated documents. As part of those procedures, faculty evaluation takes place at the department, college, and university level. The main areas of evaluation include teaching, scholarship, and service. Tools used as part of the annual evaluation process include review of the individual’s portfolio that includes, but is not limited to, the following:

- Evidence of scholarship (e.g., articles in scholarly journals; presentations at scholarly meetings).
- Service work.
- A synopsis of teaching related-activities (e.g., courses taught; new instructional procedures; interdisciplinary, diversity, international, and technology-related projects).
- Review of course syllabi.
- Peer teaching observation reports.
- Quantitative and qualitative student evaluation of instruction.

Courses – Student Learning Outcomes

Each of the courses in the EA program include learning outcomes that identify the unique knowledge and skills expected to be gained from a given course. Assessment measures exist for each learning outcome in a course. On an annual basis, specific learning outcomes are identified for assessment

purposes. Moreover, the thesis will be evaluated by the advisor on the level to which the student demonstrates achievement of the program learning outcomes. The Program Director will oversee the processes involved in the assessment of student learning outcomes, including collection and analysis of data, and creation of action plans, as necessary.

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.

Student learning outcomes will be assessed in a variety of ways. Faculty will design and evaluate assignments that assess one or more of the learning objectives. The students’ thesis will also be evaluated in the context of the program learning objectives. Assessment results will be recorded, archived, and tracked over time by the Program Director. The results will be disseminated to the economics faculty and considered in future curriculum and course development.

In addition, annual review of student attrition data, student course evaluation feedback, and faculty reviews will allow us to assess retention and constituent satisfaction. Regular discussion of these items takes place at the college-level during the CBE chairs and directors meeting. The Program Director will prepare an annual report, which will be reviewed by the Dean. Assessment of the program budget and enrollment will be part of the review process.

N. Consistency with the State’s Minority Student Achievement Goals

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

TU has a strong record of a commitment to diversity, equity, and inclusion principles. This is evidenced by the fact that Towson is only one of a handful of universities in the country to have no achievement gap, meaning that underrepresented student groups achieve the same or better academic success as the entire student population.

In 2020, Black students at TU had a six-year graduation rate of 74 percent, while overall six-year graduation rates were at 73 percent. This not a one-time occurrence, as Black students have surpassed the overall degree completion rate at Towson eight years in a row.⁸

Towson University also has a minority graduation rate of 70 percent and enrolls the second-largest population of minority students in the State of Maryland. The 2021 TU incoming first-year class was the most diverse in school history, with 59 percent identifying as a racial or ethnic minority.⁹

And in 2020, Towson University introduced its inaugural Diversity Strategic Plan. The plan, “[A More Inclusive TU: Advancing Equity and Diversity \(2020–25\)](#),” is firmly grounded in the premise that TU’s ongoing success is dependent on the university’s capacity to shift perspectives and approaches and strategically place diversity, equity, and inclusion at the core of its mission.

A strong share of students in the EA program are expected to come from TU’s diverse undergraduate population. The MS in Economic Analytics program will ensure commitment to equal education opportunities, regardless of minority status, ethnicity, gender, or sexual identity. Once enrolled, the department is committed to ensuring that all students in the program receive the support, advice, and mentoring necessary to graduate.

⁸https://www.towson.edu/news/2022/insight-into-diversity.html?utm_source=homepage&utm_medium=news (accessed 8/26/2022).

⁹<https://www.towson.edu/news/2021/firstyearstudent-facts.html> (accessed 08/26/2022).

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.**

Not applicable.

P. Adequacy of Distance Education Programs

- 1. Provide affirmation and any appropriate evidence that the institution is eligible to provide Distance Education.**

Not applicable since the program and classes are face-to-face.

- 2. Provide assurance and any appropriate evidence that the institution complies with the CRAC guidelines, particularly as it relates to the proposed program.**

Not applicable since the program and classes are face-to-face.

References

1. Bureau of Labor Statistics, U.S. Department of Labor, *Occupational Outlook Handbook*, Economists, retrieved from <https://www.bls.gov/ooh/life-physical-and-social-science/economists.htm> (accessed August 24, 2022).
2. Bureau of Labor Statistics, U.S. Department of Labor, *Occupational Outlook Handbook*, Mathematicians and Statisticians, retrieved from <https://www.bls.gov/ooh/math/mathematicians-and-statisticians.htm> (accessed August 24, 2022).
3. Occupational Information Network (O*NET), U.S. Department of Labor, Data Scientists, retrieved from <https://www.onetonline.org/link/summary/15-2051.00> (accessed August 24, 2022).
4. Occupational Information Network (O*NET), U.S. Department of Labor, Business Intelligence Analysts, retrieved from <https://www.onetonline.org/link/summary/15-2051.01> (accessed August 24, 2022).
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7. Retrieved from <https://research.schev.edu/> (accessed 8/24/2022).
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9. Retrieved from <https://www.towson.edu/news/2021/firstyearstudent-facts.html> (accessed August 26, 2022).



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

TOPIC: Academic Program Proposal:
University of Maryland, College Park: Master of Arts in Hearing and Speech Sciences

COMMITTEE: Education Policy and Student Life

DATE OF COMMITTEE MEETING: Tuesday, January 10, 2023

SUMMARY: The Master of Arts in Hearing and Speech Sciences will be a companion degree to two existing doctoral programs, the Ph.D. in Hearing and Speech Sciences, and the accredited professional Doctor of Audiology, both of which are offered by our Department of Hearing and Speech Sciences. The M.A. will not have a direct admission process but is an optional credential for students who have been admitted to either of the two doctoral programs. The curriculum consists of 36 graduate credits from the existing courses in the two doctoral programs and can be completed in two years.

UMD's Graduate School has advocated that all doctoral programs have an early exit path that will lead to a credential for students who, for any reason, cannot or choose not to complete their doctoral studies. A formal master's degree award will recognize the students' advanced level understanding of hearing and speech sciences. Students who earn the M.A. will be more marketable than those who only have bachelor's degrees, thereby leading to greater career opportunities than if they were to exit the doctoral program with no degree at all. Typically, only one student per year (or fewer) has left their doctoral program prior to completion, so no additional resources are needed for this new program.

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 Committee recommend that the Board of Regents approve the proposal from the University of Maryland, College Park to offer the Master of Arts (M.A.) in Hearing and Speech Sciences.

COMMITTEE RECOMMENDATION: DATE: January 10, 2023

BOARD ACTION: DATE:

SUBMITTED BY: Joann A. Boughman 301-445-1992 jboughman@usmd.edu



UNIVERSITY OF
MARYLAND

OFFICE OF THE PRESIDENT

December 8, 2022

Chancellor Jay A. Perman
University System of Maryland
3300 Metzert Road
Adelphi, MD 20783

Dear Chancellor Perman:

I am writing to request approval for a new Master of Arts program in Hearing and Speech Sciences. The proposal for the new program is attached. I am also submitting this proposal to the Maryland Higher Education Commission for approval.

The proposal was endorsed by the appropriate faculty and administrative committees. I also endorse this proposal and am pleased to submit it for your approval.

Sincerely,

A handwritten signature in black ink that reads "Darryll J. Pines".

Darryll J. Pines
President
Glenn L. Martin Professor of Aerospace Engineering

DJP/mdc

cc: Darlene Smith, Interim Associate Vice Chancellor
Jennifer King Rice, Senior Vice President and Provost
Susan Rivera, Dean, College of Behavioral and Social Sciences

1101 Thomas V. Miller, Jr. Administration Building
College Park, Maryland 20742
301.405.5803 TEL
301.314.9560 FAX

UNIVERSITY SYSTEM OF MARYLAND INSTITUTION PROPOSAL FOR

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

University of Maryland, College Park
Institution Submitting Proposal

Hearing and Speech Sciences
Title of Proposed Program

Master of Arts
Award to be Offered

Fall 2023
Projected Implementation Date

122004
Proposed HEGIS Code

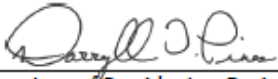
51.0201
Proposed CIP Code

Hearing and Speech Sciences
Department in which program will be located

Sandra Gordon-Salant
Department Contact

301-405-4225
Contact Phone Number

sgsalant@umd.edu
Contact E-Mail Address


Signature of President or Designee

12-08-2022
Date

A. Centrality to the University's Mission and Planning Priorities

Description. The Master of Arts in Hearing and Speech Sciences is a companion degree program to two existing doctoral programs, the Ph.D. in Hearing and Speech Sciences and an accredited professional Doctor of Audiology (Au.D.), offered within the Department of Hearing and Speech Sciences (HESP) within the College of Behavioral and Social Sciences at the University of Maryland, College Park. The M.A. will not have a direct admission process but is an optional credential for students who have been admitted to either of the two doctoral programs. The curriculum consists of 36 graduate credits from the existing courses in the two doctoral programs and can be completed in two years. Students may either complete a scholarly project (either thesis or capstone research project), or pass a set of written comprehensive examinations, to satisfy the M.A. requirements.

Relation to Strategic Goals. As written in the University of Maryland's Mission Statement, one of the university's goals for graduate education is to "Expand excellent professional graduate programs that are nationally recognized for their contributions to the practice of the professions, for their pioneering curricula, and for their spirit of innovation and creativity." An aspect of this mission is to provide appropriate exit pathways at various stages of a student's academic journey, equipping them with the training and credentials to move into a variety of careers. The University of Maryland Graduate School and its Graduate Council have advocated that all doctoral programs have an early exit path that will lead to a credential for students who, for any reason, cannot or choose not to complete their doctoral studies, or who wish to have the additional credential as part of their record.

Funding. No additional funding is required for this new degree offering since it is simply an early exit pathway for two existing doctoral programs.

Institutional Commitment. The program will be administered by the department of Hearing and Speech Sciences (HESP) within the College of Behavioral and Social Sciences at the University of Maryland (UMD). Creation of this exit pathway for doctoral students is in alignment with the priorities of, and thus institutionally supported by, UMD's Graduate School.

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

Need. The proposed program is designed to fill a void for those enrolled doctoral students who leave their program, which happens for a variety of reasons. Departing students who complete the Master's degree requirements will be eligible for higher-level jobs than those whose studies have terminated at the Bachelor's degree. The M.A. degree signifies that the holder has advanced knowledge in the field of Speech, Language, and Hearing Sciences and scholarly research associated with communication disorders.

State Plan. The proposed program aligns with the 2022 *Maryland State Plan for Postsecondary Education* in several ways, but most directly to the goal of promoting practices and policies that ensure student success. By creation of a credentialed "off-ramp" for students who enter into a doctoral program but cannot or choose not to continue through to completion, for whatever reason, the University is providing a credential that recognizes advanced training and prepares M.A.

completers for an array of non-clinical administrative and research positions that require expertise and experience beyond the bachelor's degree.

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

The focus of the HESP department's graduate instruction is on its doctoral programs, and typically only one student per year (or fewer) has left the program prior to completion. These individuals would have been eligible for receipt of the Master's credential. While the Bureau of Labor Statistics does not list this particular credential in its occupational handbook¹, the workforce needs in Speech and Audiology are growing much faster than average, nationally. Occupational growth in Montgomery and Prince Georges Counties in the Washington, DC region is also expected to be significant according to the state projections².

Individuals graduating with a Master's degree in Hearing and Speech Sciences, while not eligible for clinical practice, would be eligible for administrative or research positions in this discipline. For example, the American Speech-Language-Hearing Association (located in Rockville, MD) currently has positions for which this degree would be appropriate, including clinical research associates and managers of clinical certification. The Henry M. Jackson Foundation for the Advancement of Military Medicine (located in Bethesda, MD) has openings for research coordinators and research assistants in Audiology and Speech. There are also a number of research positions listed with the Alakaina Family of Companies in Bethesda, MD, for research assistants to provide scientific, technical, and programmatic support for research conducted at Walter Reed Army Military Medical Center (Bethesda, MD). There are numerous comparable administrative and research positions at the NIH, specifically at the National Institute for Deafness and Other Communication Disorders (NIDCD) in both the intramural and extramural programs. The Johns Hopkins University also recruits research associates in this field. Most of these positions require a Master's degree in the broad disciplines of Speech and Hearing Sciences.

D. Reasonableness of Program Duplication

There are no comparable programs in the State of Maryland. The University of Maryland offers an M.A. in Speech-Language Pathology (SLP), as do Towson University (M.S.) and Loyola University of Maryland (M.S.). The intended goal of SLP programs is to train practitioners to provide clinical services to individuals with speech and language disorders, which is not the intent of the M.A. in Hearing and Speech Sciences. We note, however, that it is quite common for Ph.D. and Au.D. programs at other institutions to offer a non-clinical M.A. option for those students who leave their doctoral program early for whatever reason.

E. Relevance to Historically Black Institutions (HBIs)

¹ <https://www.bls.gov/ooh/healthcare/speech-language-pathologists.htm>

² <http://www.dllr.state.md.us/lmi/iandoproj/wias.shtml>

No historically black institutions in Maryland offer this degree program.

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

We do not anticipate any negative impacts on the identities of the HBI's in the state of Maryland, as none offer this degree program.

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

Curricular Development. No new courses are required for this credentialed exit pathway. The course requirements for the two existing doctoral programs provide the foundation for the master's degree program. The Ph.D. program requires 32 credits of coursework and 18 credits of scholarly research. The professionally accredited clinical Doctor of Audiology program requires 61 credits of coursework (including 4 hours of capstone research), 14 credit hours of a clinical practicum, and 18 credits of a full-time clinical internship. The proposed Master's degree credential requires 30 credits of coursework and 6 additional credits of either coursework and comprehensive examinations (non-thesis option) or coursework and thesis-equivalent research. The thesis-equivalent research requirement would be met by completion of the first year/ Candidacy Research Project (for Ph.D. students) or the Capstone Research Project (for Au.D. students). Thus, doctoral students will typically have completed the requirements for the M.A. credential in about two years.

Faculty Oversight. Appendix A includes a list of both tenure-line and clinical faculty in the department of Hearing and Speech Sciences, who oversee and teach in the program.

Educational Objectives and Learning Outcomes. Due to the individualized nature of this pathway, learning outcomes are rather broad and students will be evaluated on an individualized basis. Upon completion of the Master's degree curriculum, students are expected to have demonstrated:

1. adequate performance in academic coursework;
2. understanding of ethical behavior in hearing and speech science;
3. understanding of theoretical concepts in hearing and speech science and knowledge of relevant literature;
4. understanding of and adequate skill in research methods appropriate to the discipline

Institutional assessment and documentation of learning outcomes. The Learning Outcomes Assessment for the proposed M.A. in Hearing and Speech Sciences will evaluate a student's performance in dimensions that suggest the student has acquired the knowledge and background commensurate with the degree. These dimensions will be assessed via a rubric to be administered at the time the student decides to exit the doctoral program. The student's mentor and Program Planning Committee (in the case of a Ph.D. student) or the Audiology Planning Committee (in the case of an Au.D. student) will determine if the student meets, exceeds, or has not yet met the learning objective. The completed rubric will be placed in the student's folder and if an individual student has not met expectations, then the relevant committee will meet with the student to discuss strategies to improve areas of weakness, prior to earning the M.A. degree.

Following completion of the rubrics for all students in this M.A. program each year, a summary evaluation will be made of the most recent cohort in the broad dimensions assessed in the rubric. Areas of weakness that are pervasive across students (more than 2 individual students) will be discussed among the Department's faculty at a regular faculty meeting. Any additional issues that are raised through the use of these rubrics will also be considered by the committee and the Department faculty as a whole. The goal will be to modify elements of the academic program (courses, advising strategies, comprehensive examination procedures, research projects, etc.) that are problematic.

Course requirements. The proposed 36-credit program includes the foundational coursework of the two doctoral programs. The curriculum in the Ph.D. program is highly variable, depending on the research focus of the student and their Ph.D. mentor. Program sequences will depend on the student's background and interests, but typically include 6 credits of core knowledge areas, 3-6 credits of contemporary research, 6 credits of statistics, 2 credits of ethics, 9-12 credits of electives from a variety of academic units, and 18 research credits. A full listing of courses available in the HESP department is included in Appendix B. A sample plan for an Au.D. student, whose coursework is more specific and who may complete the requirements for the M.A. degree, is shown below. Comprehensive written examinations are given at the end of the spring semester in each year.

General Education. As a graduate program, General Education requirements are not applicable.

Accreditation or Certification Requirements. The M.A. in Hearing and Speech Sciences is a non-clinical degree. There is no clinical practicum requirement, and graduates will not be eligible for licensure or certification in Audiology or Speech-Language Pathology.

Year 1	Course	Title	Credits
Fall	HESP 606	Basic Hearing Measurement	3
	HESP 700	Hearing Aids I	3
	HESP 600	Instrumentation	3
Winter	HESP 615	Counseling in Communicative Disorders	3
Spring	HESP 701	Hearing Aids II	3
	HESP 706	Advanced Clinical Audiology	3
	EDMS 645	Quantitative Research Methods I	3

Summer I	HESP 635	Rehabilitative Audiology	3
Summer II	HESP 634	Anatomy & Physiology of the Auditory & Vestibular Systems	3
Year 2	Course	Title	Credits
Fall	HESP 630	Electrophysiologic Measures I	3
	HESP 722	Psychoacoustics	3
	HESP 645	Pediatric Audiology	3
Winter	HESP 704	Practice Management	3
Spring	HESP 632	Medical Audiology	3
	HESP 724	Research Design	3
		Elective (HESP 636 or HESP 730)	3

Other Institutions or Organizations. The department is not planning to contract with another institution or non-collegiate organization for this program. Students may fulfill their requirements entirely within the Department of Hearing and Speech Sciences, although some courses are available in other academic programs as electives. Students also have the opportunity to fulfill elective options, in consultation with their academic advisor, at a number of universities in the metropolitan DC area through the Washington Area Consortium, as well as through inter-institutional enrollment within the University System of Maryland.

Student Support. This credential is only available to current doctoral students (either Au.D. or Ph.D.), and as such, students have the support and mentoring of the Graduate Faculty in the HESP department. The overall academic direction and oversight for the program will be provided by the Director of Graduate Studies in HESP. On an individual student basis, academic direction for a particular course of study to satisfy program requirements will be from the student's Program Planning Committee (in the case of Ph.D. students), and from the student's academic advisor and two additional faculty members (in the case of Au.D. students).

Marketing and Admissions Information. Since the focus of this program is to provide an exit pathway for doctoral students, there will be no direct admissions process for the master's degree. Admission to the doctoral program follows the requirements of the UMD Graduate School and is competitive. To be considered for admission to either of the doctoral programs, students must provide three letters of recommendation, a description of prior research or work experience, and a sample of scholarly writing in addition to the Graduate School requirements. Admission is currently confined to fall matriculation; early application is encouraged. Current doctoral students who are considering the M.A. program will learn about the procedures for completing the degree through their advisors.

H. Adequacy of Articulation

As a graduate program, articulation agreements with community colleges are not applicable.

I. Adequacy of Faculty Resources

Program faculty. Appendix A contains a list of faculty members in the department of Hearing and Speech Sciences, all of whom have appropriate credentials for graduate instruction. A small cadre of

clinicians and researchers in the discipline are also brought on as adjunct faculty to provide additional expertise.

Faculty training. Faculty teaching in the program will use the University's learning management system along with its extensive electronic resources. They will have access to instructional development opportunities available across the College Park campus, including those offered as part of the Teaching and Learning Transformation Center, many of which are delivered in a virtual environment. Instructors will work with the learning design specialists on campus to incorporate best practices when teaching in the online environment.

J. Adequacy of Library Resources

The University of Maryland Libraries assessment concluded that the Libraries are able to meet, with current resources, the curricular and research needs of the program.

K. Adequacy of Physical Facilities, Infrastructure, and Instructional Resources

All physical facilities, infrastructure and instructional equipment are already in place for the Ph.D. and Au.D. programs. No new facilities are required.

L. Adequacy of Financial Resources

There are no new courses or sections of existing courses to be taught. There will be no resources required, either faculty or administrative, other than those already in place for the existing Ph.D. and Au.D. programs. We anticipate that only a very few students per year may take advantage of this option. The budget tables reflect that no additional resources are required, and that students who are currently on an assistantship would continue to be supported through to completion of this pathway.

Resources:

1. Reflects the assistantship stipend
2. Our model assumes that students in this pathway will be in the program full-time.

Expenditures:

- Items 1-3 and 5-8: No additional resources are required to support this pathway.
Item 4: Reflect the support that the university provides (tuition remission and stipend) for students who have an assistantship in the program.

M. Adequacy of Program Evaluation

Formal program review is carried out according to the University of Maryland's policy for Periodic Review of Academic Units, which includes a review of the academic programs offered by, and the research and administration of, the academic unit (<http://www.president.umd.edu/policies/2014-i-600a.html>). Program Review is also monitored following the guidelines of the campus-wide cycle of Learning Outcomes Assessment (<https://www.irpa.umd.edu/Assessment/LOA.html>). Faculty within

the department are reviewed according to the University's Policy on Periodic Evaluation of Faculty Performance (<http://www.president.umd.edu/policies/2014-ii-120a.html>). Since 2005, the University has used an online course evaluation instrument that standardizes course evaluations across campus. The course evaluation has standard, university-wide questions and also allows for supplemental, specialized questions from the academic unit offering the course.

N. Consistency with Minority Student Achievement goals

As this is an exit option for enrolled doctoral students, the specific actions and strategies to be utilized to recruit and retain a diverse student body reflect those already in place for the two doctoral programs that potentially feed into this M.A. program. The department has adopted a number of strategies in recent years in the doctoral programs to recruit and retain a diverse student cohort. Recruitment efforts include holding Open Houses and encouraging potential applicants to attend, having individual discussions with students from diverse backgrounds who may be considering applying, and informing admitted applicants from diverse communities early with a personal phone call about their admission. Retention efforts rely on strong faculty and peer mentoring, as well as building associations with professionals who themselves are from diverse backgrounds.

It is our intent that all of our doctoral students, especially those from diverse backgrounds, will complete the doctoral program in which they are enrolled. For those students who must leave their doctoral program, however, a formal master's degree award will recognize their advanced level understanding of hearing and speech sciences. Students with an M.A. in Hearing and Speech Sciences will be more marketable than those who only have bachelor's degrees, thereby leading to greater achievements than if they were to exit the doctoral program with no graduate degree at all.

O. Relationship to Low Productivity Programs Identified by the Commission

Since this program is designed to be an exit pathway, with no direct admissions process, the low productivity criteria are not applicable.

P. Adequacy of Distance Education Programs

This program is not intended for distance education.

Tables 1 and 2: Resources and Expenditures

RESOURCES	Year 1	Year 2	Year 3	Year 4	Year 5
1. Reallocated Funds	\$20,000	\$20,600	\$21,218	\$21,855	\$22,510
2. Tuition/Fee Revenue (c+g below)	\$16,238	\$16,725	\$17,227	\$17,744	\$18,276
a. #FT Students	1	1	1	1	1
b. Annual Tuition/Fee Rate	\$16,238	\$16,725	\$17,227	\$17,744	\$18,276
c. Annual FT Revenue (a x b)	\$16,238	\$16,725	\$17,227	\$17,744	\$18,276
d. # PT Students	0	0	0	0	0
e. Credit Hour Rate	\$907.65	\$934.88	\$962.92	\$991.81	\$1,021.57
f. Annual Credit Hours	6	6	6	6	6
g. Total Part Time Revenue (d x e x f)	\$0	\$0	\$0	\$0	\$0
3. Grants, Contracts, & Other External Sources	\$0	\$0	\$0	\$0	\$0
4. Other Sources	\$0	\$0	\$0	\$0	\$0
TOTAL (Add 1 - 4)	\$36,238	\$37,325	\$38,445	\$39,598	\$40,786

EXPENDITURES	Year 1	Year 2	Year 3	Year 4	Year 5
1. Faculty (b+c below)	\$0	\$0	\$0	\$0	\$0
a. #FTE	0.0	0.0	0.0	0.0	0.0
b. Total Salary	\$0	\$0	\$0	\$0	\$0
c. Total Benefits	\$0	\$0	\$0	\$0	\$0
2. Admin. Staff (b+c below)	\$0	\$0	\$0	\$0	\$0
a. #FTE	0.0	0.0	0.0	0.0	0.0
b. Total Salary	\$0	\$0	\$0	\$0	\$0
c. Total Benefits	\$0	\$0	\$0	\$0	\$0
3. Total Support Staff (b+c below)	\$0	\$0	\$0	\$0	\$0
a. #FTE	0.0	0.0	0.0	0.0	0.0
b. Total Salary	\$0	\$0	\$0	\$0	\$0
c. Total Benefits	\$0	\$0	\$0	\$0	\$0
4. Graduate Assistants (b+c)	\$36,238	\$37,325	\$38,445	\$39,598	\$40,786
a. #FTE	1.0	1.0	1.0	1.0	1.0
b. Stipend	\$20,000	\$20,600	\$21,218	\$21,855	\$22,510
c. Tuition Remission	\$16,238	\$16,725	\$17,227	\$17,744	\$18,276
5. Equipment	\$0	\$0	\$0	\$0	\$0
6. Library	\$0	\$0	\$0	\$0	\$0
7. New or Renovated Space	\$0	\$0	\$0	\$0	\$0
8. Other Expenses: Operational Expenses	\$0	\$0	\$0	\$0	\$0
TOTAL (Add 1 - 8)	\$36,238	\$37,325	\$38,445	\$39,598	\$40,786

Appendix A: Faculty in the Department of Hearing and Speech Sciences

All of the core tenure-line and clinical faculty who teach at the graduate level hold doctoral degrees in a field relevant to the discipline. All faculty listed are full-time. Specific instructional responsibilities vary by semester, and the department also contracts periodically with practicing clinicians to augment the curriculum. Credentials in this field include the Certificate of Clinical Competence in Audiology (CCC-A) and the Certificate of Clinical Competence in Speech-Language Pathology (CCC-SLP) in addition to the Au.D. and Ph.D.

Name	Title	Credentials	Institution & Area of terminal degree
Full-time faculty			
Rochelle Newman	Professor and Chair	Ph.D.	SUNY Buffalo, Psychology
Samira Anderson	Assoc Prof and Director of Graduate Studies	Au.D., Ph.D., CCC-A	Northwestern U, Audiology
Nan Bernstein Ratner	Professor and DGS, NACS	M.A., Ed.D., CCC-SLP	Boston U., Applied Psycholinguistics
Jan Edwards	Professor	Ph.D., CCC-SLP	CUNY Graduate Center, Speech-Language Pathology
Yasmeen Farooqi-Shah	Professor	M.A., Ph.D., CCC-SLP	Northwestern U., Speech-Language Pathology
Sandra Gordon-Salant	Professor, Director of CAUD Program	M.A., Ph.D., CCC-A	Northwestern U., Audiology
Matthew Goupell	Professor and Director, Ph.D. Program	Ph.D.	Michigan State U., Physics
Eric Hoover	Assistant Prof	Ph.D.	Northwestern U., Audiology
Yi Ting Huang	Assoc Prof	Ph.D.	Harvard U., Developmental Psychology
Eusabia Mont	Clinical Assoc Prof	M.A., CCC-SLP	California State U - Northridge, Speech-Language Pathology
Nicole Nguyen	Clinical Assoc Prof	Au.D., CCC-A	University of Maryland, Audiology
Jared Novick	Assoc Prof	Ph.D.	U. of Pennsylvania, Cognitive Psychology
Vivian Sisskin	Clin Prof	M.A., CCC-SLP	Chapman U., Speech-Language Pathology
Kristin Slawson	Clin. Assoc Prof	M.A., CCC-SLP	UMD, Speech-Language Pathology
Colleen Worthington	Clinical Professor	M.A., CCC-SLP	Loyola U., Speech-Language Pathology

Appendix B: Course Descriptions

HESP600 Instrumentation in Hearing and Speech Sciences (3 Credits)

Types and principles of operation of electronic equipment used in the hearing and speech sciences.

Restriction: Must be in Clinical Audiology: Au.D. or Ph.D. (Doctoral) program; and permission of BSOS-Hearing & Speech Sciences department. Or permission of instructor.

HESP601 Foundations of Scientific Inquiry (1 Credit)

Overview of methods of empirical research used in Communication Sciences and Disorders. The course will focus on identifying, critically analyzing, and writing about empirical research.

Restriction: Must be in Hearing and Speech Sciences: M.A. (Master's) program; or permission of Instructor.

Additional Information: Course meets over three semesters for the duration of the Masters of Speech-Language Pathology program.

HESP602 Advanced Seminar in Neurological Bases of Communication (2 Credits)

An advanced discussion of the neural bases of human communication and its disorders, neuroimaging, neural plasticity and neurological evaluations, with emphasis on current developments and critical analysis.

Prerequisite: An undergraduate course in human neuroanatomy.

Restriction: Permission of BSOS-Hearing & Speech Sciences department.

HESP603 Seminar in Cultural and Linguistic Diversity in Communication Disorders (1 Credit)

Overview of cultural and linguistic diversity (CLD) in general, and the impact of CLD on communication, communication disorders, and the professional practice of Speech-Language Pathology

Restriction: Must be in Hearing and Speech Sciences: M.A. (Master's) program; or permission of Instructor.

Additional Information: Course meets over four semesters for the duration of the Masters of Speech-Language Pathology program.

HESP605 Assessment & Intervention in Bilingual Populations (3 Credits)

Integrates foundational knowledge pertaining to bilingualism in speech-language pathology. This course provides students with a framework for working with individuals from culturally and linguistically diverse backgrounds. This course is designed to educate and train student clinicians to serve as bilingual speech-language pathologists.

Restriction: Must be in Hearing and Speech Sciences: M.A. (Master's) program.

HESP606 Basic Hearing Measurements (3 Credits)

Theoretical principles, methodology, and interpretation of routine audiometric tests, including pure tone, speech, and acoustic immittance measures. Modification of procedures for special populations. Equipment calibration and mass hearing screening programs.

Prerequisite: [HESP411](#); or students who have taken courses with comparable content may contact the department.

Restriction: Must be in Clinical Audiology: Au.D. or Ph.D. (Doctoral) program; and permission of BSOS-Hearing & Speech Sciences department. Or permission of instructor.

HESP610 Language Disorders in Adults (2 Credits)

Etiology, diagnosis and management of language problems of adults associated with aging, brain injury and degenerative conditions.

Restriction: Must be in Hearing and Speech Sciences: M.A. (Master's) program; or permission of instructor.

HESP611 Cognitive Disorders in Adults (2 Credits)

Etiology, diagnosis and management of cognitive problems of adults associated with aging, brain injury and degenerative conditions.

Prerequisite: Must have completed or be concurrently enrolled in [HESP610](#); and must have knowledge of basic human neuroanatomy.

Restriction: Must be in Hearing and Speech Sciences: M.A. (Master's) program; or permission of instructor.

HESP612 Fluency Disorders (2 Credits)

The nature of fluency disorders. Principles, methods and procedures for the clinical management of fluency disorders in children and adults.

Restriction: Must be in Hearing and Speech Sciences: M.A. (Master's) program; and permission of BSOS-Hearing & Speech Sciences department. Or permission of instructor.

HESP613 Autism Spectrum Disorders (2 Credits)

Etiology, diagnosis and management of autism spectrum disorders.

Restriction: Must be in Hearing and Speech Sciences: M.A. (Master's) program; or permission of instructor.

Credit Only Granted for: HESP639A or [HESP613](#).

Formerly: HESP639A.

HESP615 Counseling in Communicative Disorders (3 Credits)

Introduction to the application of counseling principles and methodologies for working with individuals with communication disorders and their families. The role of the audiologist and speech language pathologist as counselors will be explored. Class content will focus on theoretical approaches and techniques to counseling from the fields of psychology, social work, and family the family therapy. The application of counseling in the diagnostic process as well as treatment of a wide variety of communication disorders will be highlighted throughout the course.

Recommended: [HESP400](#) and [HESP411](#).

HESP616 Language Disorders in the Pre-school Age (2 Credits)

Theoretical, empirical and clinical perspectives on language disorders in children from infancy through pre-school age.

Prerequisite: [HESP400](#); or students who have taken courses with comparable content may contact the department.

Restriction: Must be in Hearing and Speech Sciences: M.A. (Master's) program; and permission of BSOS-Hearing & Speech Sciences department. Or permission of instructor.

HESP617 Cultural and Linguistic Diversity in Communication and its Disorders (2 Credits)

An exploration and discussion of cultural and linguistic diversity, its impact on communication and communication disorders, and strategies for assessment and intervention of culturally and linguistically diverse clients

Recommended: [HESP417](#) or equivalent.

Restriction: Must be in one of the following programs (Hearing and Speech Sciences: Ph.D. (Doctoral); Clinical Audiology: Au.D. or Ph.D. (Doctoral); Hearing and Speech Sciences: M.A. (Master's)).

HESP620 Speech Production Disorders Across the Lifespan (3 Credits)

Assessment and treatment of phonological, articulatory and resonance disorders arising from various etiologies including developmental conditions, structural abnormalities, and nervous system damage.

Restriction: Must be in Hearing and Speech Sciences: M.A. (Master's) program; or permission of instructor.

HESP621 Bilingualism in Children and Adults (3 Credits)

Provides an overview of topics related to bilingualism in both pediatric and adult populations, with an emphasis on application in the field of communication disorders. This course explores theories of bilingual language acquisition, typical and atypical bilingual development, cognition in bilinguals, and the neurological underpinnings of bilingualism. This course will provide practicing clinicians with foundational knowledge related to bilingualism in both pediatric and adult populations. Currently there are no existing courses that provide this content with a focus on communication disorders.

HESP622 Neuromotor Disorders of Speech (3 Credits)

Effects of neuropathology on speech production. Classification and assessment of the resultant disorders and their treatment.

Restriction: Must be in Hearing and Speech Sciences: M.A. (Master's) program; and permission of BSOS-Hearing & Speech Sciences department. Or permission of instructor.

HESP623 Education, Policy & Advocacy in Bilingual Service Delivery (3 Credits)

Bilingual education and associated policy issues in the US as they relate to the field of speech-language pathology. Topics include bilingual education models, disproportionality, and the legal framework related to bilingual service delivery in education settings.

HESP624 Voice Disorders (2 Credits)

Etiological characteristics, assessment and treatment of phonatory disorders in children and adults.

Restriction: Permission of BSOS-Hearing & Speech Sciences department; or must be in Hearing and Speech Sciences: M.A. (Master's) program.

HESP625 Dysphagia (3 Credits)

Nature and clinical management of dysphagia as it pertains to different clinical settings for adult and pediatric populations.

Restriction: Permission of BSOS-Hearing & Speech Sciences department; or must be in Hearing and Speech Sciences: M.A. (Master's) program.

HESP626 Language disorders in school-aged children and adolescents (2 Credits)

Etiology, assessment and treatment of communication and learning problems in school age children and adolescents

HESP627 Augmentative and Alternative Communication (2 Credits)

Principles, methods, and procedures for categorizing, understanding, and developing augmentative and alternative communication.

Recommended: Prior knowledge of Communication and its Disorders is required.

Restriction: Permission of BSOS-Hearing & Speech Sciences department.

Credit Only Granted for: HESP639R or [HESP627](#).

HESP630 Electrophysiological Measurements (3 Credits)

Principles and techniques of physiological and electrophysiological measures of the audio-vestibular mechanisms.

Prerequisite: [HESP606](#).

Restriction: Must be in Clinical Audiology: Au.D. or Ph.D. (Doctoral) program; and permission of BSOS-Hearing & Speech Sciences department. Or permission of instructor.

HESP632 Medical Audiology (3 Credits)

Overview of auditory pathologies, and their assessment and management in the medical setting.

Prerequisite: [HESP311](#).

Corequisite: [HESP606](#).

HESP634 Anatomy and Physiology of the Auditory and Vestibular Systems (3 Credits)

Comprehensive examination of the anatomy and physiology of the peripheral as well as the central auditory and vestibular systems. Both afferent and efferent pathways will be considered. Applications of basic auditory neuroscience to contemporary clinical audiology practice will be highlighted.

Prerequisite: Must have completed or be concurrently enrolled in [HESP311](#), [HESP407](#), and [HESP411](#); or permission of instructor.

Additional Information: Fills a requirement for the Doctoral Program in Clinical Audiology (CAUD). Open to students in other graduate programs, especially NACS.

HESP635 Aural Rehabilitation/Habilitation (3 Credits)

Principles, methods and procedures for aural rehabilitation/habilitation in children and adults.

HESP636 Geriatric Audiology (3 Credits)

Research findings are presented on the physical effects of aging on the auditory periphery and central nervous system, as well as the consequences of aging on behavioral and electrophysiologic measures

of auditory function. Clinical implications in the effects of physiologic and cognitive aging on auditory performance will be discussed.

Prerequisite: [HESP606](#) and [HESP700](#).

Restriction: Must be in one of the following programs (Hearing and Speech Sciences: Ph.D. (Doctoral); Clinical Audiology: Au.D. or Ph.D. (Doctoral); Hearing and Speech Sciences: M.A. (Master's)).

HESP638 Research Practicum (1-3 Credits)

Analysis, synthesis and integration of knowledge related to current research or clinical issues in human communication and its related disorders.

Restriction: Permission of BSOS-Hearing & Speech Sciences department.

Repeatable to: 6 credits if content differs.

HESP639 Special Topics in Hearing and Speech Sciences (1-3 Credits)

Intensive coverage of selected topics of current interest.

Restriction: Permission of BSOS-Hearing & Speech Sciences department.

Repeatable to: 6 credits if content differs.

HESP645 Pediatric Audiology (3 Credits)

Evaluation and treatment of hearing-impaired children.

Prerequisite: [HESP606](#).

Restriction: Must be in Clinical Audiology: Au.D. or Ph.D. (Doctoral) program; and permission of BSOS-Hearing & Speech Sciences department. Or permission of instructor.

HESP646 Educational Audiology (3 Credits)

Examination of historical and current trends influencing educational programming for hearing-impaired children, communication options for severely and profoundly hearing-impaired children, and the role of the audiologist in the educational setting.

Prerequisite: [HESP606](#).

Recommended: [HESP645](#).

HESP648 Clinical Practice in Speech (1-3 Credits)

Supervised training in the application of clinical methods in the diagnosis and treatment of speech disorders.

Restriction: Permission of instructor.

Repeatable to: 6 credits.

HESP648A Clinical Practice in Speech: Diagnostic Procedures (1-3 Credits)

Supervised training in the application of clinical methods in the diagnosis of speech disorders.

Restriction: Permission of instructor.

HESP648B Clinical Practice in Speech: Therapeutic Procedures (1-3 Credits)

Supervised training in the application of clinical methods in the treatment of speech disorders.

Prerequisite: [HESP648A](#).

Restriction: Permission of instructor.

Repeatable to: 6 credits.

HESP649 Clinical Practice in Audiology (1-3 Credits)

Supervised training in the application of clinical methods in the diagnosis and treatment of hearing disorders.

Restriction: Permission of instructor.

Repeatable to: 6 credits.

HESP649A Clinical Practice in Audiology: Diagnostic Procedures (1-3 Credits)

Supervised training in the application of clinical methods in the diagnosis of hearing disorders.

Restriction: Permission of instructor.

Repeatable to: 6 credits.

HESP649B Clinical Practice in Audiology - Aural Rehabilitation (1 Credit)

A clinical practicum course with individualized instruction, which focuses on the skills necessary to provide intervention and counseling for a wide range of disorders of the auditory system in patients of varying ages and cultural backgrounds. Each student will be doing various activities across three semesters (Spring YR2, Summer YR2, and Fall YR3). Students may work individually or in pairs to provide hearing loss intervention, auditory training, hearing loss prevention education, and communication strategy training. The student is expected to prepare for each session with a complete clinical plan, educational materials, and counseling strategies. Students must meet with the Audiologist prior to the aural rehabilitation (AR) session to discuss the plan of care. During the visit, the student will perform hearing loss handicap assessments, lead counseling sessions regarding rehabilitative options, make modifications to existing treatment plans/hearing aids, and educate the patient about their hearing. Following the visit, the student will document the encounter according to clinical protocol and ethical standards using the electronic medical records system. All patient-related information will be handled within a secure computer environment which meets HIPAA regulations for protected health information.

Prerequisite: [HESP649A](#).

HESP658 Special Clinical Topics in Hearing and Speech (1-3 Credits)

Comprehensive coverage of selected topics pertinent to clinical issues. Specific content varies each semester, and may include supervision, clinical ethics, etc.

Restriction: Permission of BSOS-Hearing & Speech Sciences department.

Repeatable to: 6 credits if content differs.

HESP700 Hearing Aids (3 Credits)

Principles, methods and procedures for selection, fitting, calibration and management of amplification systems for hearing-impaired children and adults.

HESP701 Hearing Aids II (3 Credits)

Advanced issues in amplification technology, prescriptive hearing aid selection, and management of amplification systems for special populations.

Prerequisite: [HESP700](#).

Restriction: Must be in one of the following programs (Hearing and Speech Sciences: Ph.D. (Doctoral); Clinical Audiology: Au.D. or Ph.D. (Doctoral); Hearing and Speech Sciences: M.A. (Master's)); and permission of BSOS-Hearing & Speech Sciences department. Or permission of instructor.

HESP702 Diagnostic Procedures in Speech-Language Pathology (2 Credits)

Diagnostic tools and methods in the analysis of speech-language disorders in children and adults.

Restriction: Must be in Hearing and Speech Sciences: M.A. (Master's) program; and permission of BSOS-Hearing & Speech Sciences department. Or permission of instructor.

HESP704 Audiology Practice Management (3 Credits)

Basics of clinical business management both in the context of private practice in Audiology and as a department in a healthcare corporation.

Prerequisite: [HESP606](#), [HESP706](#), [HESP700](#), and [HESP701](#); or permission of instructor.

HESP706 Advanced Clinical Audiology (3 Credits)

Advanced clinical and experimental methods of evaluating the peripheral and central auditory system using acoustic stimuli. Procedural considerations and interpretation of test results.

Prerequisite: [HESP606](#); or students who have taken courses with comparable content may contact the department.

HESP708 Independent Study (1-6 Credits)

Individual research projects under guidance of a faculty member.

Restriction: Permission of instructor.

Repeatable to: 6 credits.

HESP710 Industrial and Environmental Noise Problems (3 Credits)

Evaluation and control of noise hazards. Effects of noise on man. Medico-legal aspects of noise-induced hearing impairment.

Restriction: Permission of instructor.

HESP712 Cochlear Implants and Other Implantable Technologies (3 Credits)

Comprehensive presentation of cochlear implant design and processing, medical/surgical aspects, evaluation, programming, outcomes in children and adults, and post stimulation care. The role of the audiologist as a member of the cochlear implant team will be emphasized. Current and emerging trends in other implantable technologies also will be covered.

Prerequisite: Must have completed or be concurrently enrolled in [HESP700](#), [HESP701](#), and [HESP722](#); or permission of instructor.

HESP722 Psychoacoustics (3 Credits)

Auditory perception and auditory processing in normal and impaired hearing.

HESP724 Research Design (3 Credits)

Evaluations of research designs, critique of published articles and student involvement in designing experiments on assigned topics.

Prerequisite: Must have completed a course in basic statistics.

HESP728 Advanced Clinical Practice in Speech (1-8 Credits)

Clinical internship in selected off-campus facilities.

Prerequisite: [HESP648](#).

Restriction: Permission of instructor.

Repeatable to: 8 credits.

HESP729 Advanced Clinical Practice in Audiology (1-8 Credits)

Clinical internship in selected off-campus facilities.

Prerequisite: [HESP649](#).

Restriction: Permission of instructor.

Repeatable to: 8 credits.

HESP730 Vestibular-ocular Assessment and Management (Electrophysiologic Measures II) (3 Credits)

Advanced principles and methods of evaluating vestibular-ocular function using electrophysiologic measures. Includes rehabilitative issues pertaining to balance disorders and advanced electrophysiologic measures of auditory system function.

Prerequisite: [HESP630](#).

HESP731 Seminar in Clinical Supervision (1 Credit)

Supervising students and employees can be a daunting task. Fostering the next generation of doctors of audiology and support staff requires a unique set of knowledge and skills. This course is designed to explore the theoretical concepts in the supervisory paradigm as well as real-world scenarios. Supervision is not a "one-size fits-all" process, therefore the intricacies and strategies of the supervisor-supervisee relationship must be carefully considered.

Prerequisite: In at least the third year in AuD program.

HESP788 Graduate Research Externship (1-3 Credits)

Off-campus research internship with departmental affiliates at National Institutes of Health and other regional universities. Contact department chairman for available placements, requirements and openings.

Recommended: [HESP724](#).

HESP799 Master's Thesis Research (1-6 Credits)

HESP808 Current Research in Hearing, Speech and Language Services (1-3 Credits)

Current research in speech, language and hearing sciences and disorders.

Restriction: Must be in one of the following programs (Hearing and Speech Sciences: Ph.D. (Doctoral); Clinical Audiology: Au.D. or Ph.D. (Doctoral); Hearing and Speech Sciences: M.A. (Master's)); and permission of BSOS-Hearing & Speech Sciences department.

Repeatable to: 6 credits if content differs.

HESP818 Seminar in Language Processing (3 Credits)

Information processing models of language, relationships among language, memory and cognition.

Restriction: Must be in one of the following programs (Hearing and Speech Sciences: Ph.D. (Doctoral); Clinical Audiology: Au.D. or Ph.D. (Doctoral); Hearing and Speech Sciences: M.A. (Master's)); and permission of instructor.

Repeatable to: 6 credits if content differs.

HESP828 Seminar in Hearing Science (3 Credits)

Recent developments in auditory psychophysics, and/or anatomy and physiology of the peripheral and central auditory mechanisms.

Restriction: Must be in one of the following programs (Hearing and Speech Sciences: Ph.D. (Doctoral); Clinical Audiology: Au.D. or Ph.D. (Doctoral); Hearing and Speech Sciences: M.A. (Master's)); and permission of BSOS-Hearing & Speech Sciences department.

Repeatable to: 6 credits if content differs.

HESP829 Clinical Internship Residency (1-9 Credits)

Off-Campus, full-time (30-40 hours/week) clinical externship in Audiology at regional and national institutions.

Prerequisite: Must have completed [HESP729](#) for two semesters; and must have completed the comprehensive exams successfully.

Restriction: Permission of BSOS-Hearing & Speech Sciences department.

Repeatable to: 18 credits if content differs.

HESP838 Seminar in Language Acquisition (3 Credits)

Models of normal and disordered first language acquisition, second language acquisition and bilingualism.

Restriction: Must be in one of the following programs (Hearing and Speech Sciences: Ph.D. (Doctoral); Clinical Audiology: Au.D. or Ph.D. (Doctoral); Hearing and Speech Sciences: M.A. (Master's)); and permission of instructor.

Repeatable to: 6 credits if content differs.

HESP848 Seminar in Audiology (3 Credits)

Research topics related to hearing assessment, amplification, and audiologic rehabilitation.

Restriction: Must be in one of the following programs (Hearing and Speech Sciences: Ph.D. (Doctoral); Clinical Audiology: Au.D. or Ph.D. (Doctoral); Hearing and Speech Sciences: M.A. (Master's)); and permission of instructor.

Repeatable to: 6 credits if content differs.

HESP849 Capstone Research Project I (2 Credits)

First of two-course sequence leading to the final research requirement for the Doctor of Audiology (Au.D.) degree; involves individual study and/or supervised lab work with mentor, preparation of research proposal (including IRB protocol if required), and attendance at Capstone Research Project Workshop.

Prerequisite: [HESP724](#).

Restriction: Must not be in Clinical Audiology: Au.D. or Ph.D. (Doctoral) program.

HESP858 Seminar in Speech Pathology (3 Credits)

Problems in disordered articulation, voice, fluency and dysphagia.

Restriction: Must be in one of the following programs (Hearing and Speech Sciences: Ph.D. (Doctoral); Clinical Audiology: Au.D. or Ph.D. (Doctoral); Hearing and Speech Sciences: M.A. (Master's)); and permission of instructor.

Repeatable to: 6 credits if content differs.

HESP859 Capstone Research Project II (1-2 Credits)

Second of two-course sequence leading to the final research requirement for the Doctor of Audiology (Au.D.) degree; involves final data collection, analysis and presentation of results or completion of scholarly paper under the direction of the faculty mentor.

Prerequisite: Must have completed or be concurrently enrolled in [HESP849](#).

Restriction: Must be in Clinical Audiology: Au.D. or Ph.D. (Doctoral) program.

HESP868 Seminar in Speech Science (3 Credits)

Problems in speech acoustics and physiology.

Restriction: Permission of instructor.

Repeatable to: 6 credits.

HESP878 Seminar in Language Disorders (3 Credits)

Congenital and acquired language disorders of children and adults.

Restriction: Permission of instructor.

Repeatable to: 6 credits.

HESP879 Academic Research Seminar (1 Credit)

An overview of issues relevant to the research process will be provided. Topics rotate on a semester basis and include ethics, grantsmanship, professional presentations, research publications, and peer review of journal articles. A formal product (e.g., poster presentation, platform presentation, peer review, IRB application) will be required each semester.

Restriction: Must be in Hearing and Speech Sciences: Ph.D. (Doctoral) program.

Repeatable to: 3 credits if content differs.

HESP887 Academic Research Seminar (2 Credits)

This course has a focused, rotating set of topics each semester to cover professional and academic issues, including ethics, grantsmanship, professional presentations, professional publications, and peer review of journal articles.

Prerequisite: [HESP724](#).

Restriction: Must be in one of the following programs (Hearing and Speech Sciences: Ph.D. (Doctoral); Clinical Audiology: Au.D. or Ph.D. (Doctoral)).

HESP888 Seminar in Neurological Bases of Language (3 Credits)

Neural strategies of language function, brain image of normal and disordered language function, and neural plasticity for language.

Restriction: Must be in one of the following programs (Hearing and Speech Sciences: Ph.D. (Doctoral); Clinical Audiology: Au.D. or Ph.D. (Doctoral); Hearing and Speech Sciences: M.A. (Master's)); and permission of instructor.

Repeatable to: 6 credits if content differs.

HESP889 Doctoral Candidacy Research (1-3 Credits)

Doctoral candidacy paper research

Restriction: Must be in one of the following programs (Hearing and Speech Sciences: Ph.D. (Doctoral); Clinical Audiology: Au.D. or Ph.D. (Doctoral)) ; and permission of instructor.

Repeatable to: 6 credits if content differs.

HESP898 Pre-Candidacy Research (1-8 Credits)

HESP899 Doctoral Dissertation Research (1-8 Credits)



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

TOPIC: Academic Program Proposal:
University of Maryland Global Campus: Bachelor of Science in Applied Technology

COMMITTEE: Education Policy and Student Life

DATE OF COMMITTEE MEETING: Tuesday, January 10, 2023

SUMMARY: The B.S. in Applied Technology allows students to focus on computing technology. The program is cross-disciplinary, requiring the synthesis and application of computing skills to other technology-adjacent areas selected by students, based on interest, experience, and career goals. Students must develop the essential skills of critical thinking, problem-solving, communication, teamwork, and the ability to incorporate diverse perspectives – all skills that are a focus of the program.

The major in Applied Technology requires students to complete 30 credits, of which nine credits (including 3 upper-level credits) are within a specific computing discipline currently offered by the School of Cybersecurity and Information Technology. Students take an additional 18 credits in areas that are distinct from the specific computing discipline. Students complete the degree with a capstone course that requires the integration and application of the knowledge from the secondary area(s) to the computing skills acquired from the primary (computing) discipline. The program’s structure gives students a high degree of flexibility to maximize the application of prior learning and college credits, while also ensuring that they have meaningful learning in the application of technology skills to real world business problems across the diverse range of careers and fields that rely on technology.

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

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

CHANCELLOR’S RECOMMENDATION: That the Education Policy and Student Life Committee recommend that the Board of Regents approve the proposal from University of Maryland Global Campus to offer the Bachelor of Science in Applied Technology.

COMMITTEE RECOMMENDATION: DATE: January 10, 2023

BOARD ACTION: DATE:

SUBMITTED BY: Joann A. Boughman 301-445-1992 jboughman@usmd.edu



November 15, 2022

Jay A. Perman, MD
Chancellor
University System of Maryland 3300 Metzert Road
Adelphi, MD 20783

Dear Chancellor Perman:

On behalf of the University of Maryland Global Campus (UMGC), this letter serves as an official request for a new bachelor's degree program in Applied Technology. (HEGIS:070102 CIP: 11.0101). In accordance with COMAR 13B.02.03, the following proposal is submitted for your review.

We appreciate your review of this request and look forward to your response. If you have any questions or require additional information, please contact me at blakely.pomietto@umgc.edu.

Sincerely,



Blakely R. Pomietto, MPH
Senior Vice President and Chief Academic Officer

CC: Darlene Brannigan Smith, Interim Associate Vice Chancellor for Academic Affairs, University System of Maryland

UNIVERSITY SYSTEM OF MARYLAND INSTITUTION PROPOSAL FOR

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

University of Maryland Global Campus

Institution Submitting Proposal

Applied Technology

Title of Proposed Program

Bachelor's Degree

Fall 2023

Award to be Offered

Projected Implementation Date

70102.00

11.0101

Proposed HEGIS Code

Proposed CIP Code

School of Cybersecurity and Information
Technology

Blakely Pomietto

Department in which program will be located

Department Contact

301-985-7414

blakely.pomietto@umgc.edu

Contact Phone Number

Contact E-Mail Address



11/15/2022

Signature of President or Designee

Date

A. Centrality to Institutional Mission 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.

Consistent with the institutional purpose as stipulated by State statute (Md. Education Code Ann. § 13-101(2013)1), the mission of UMGC is improving the lives of adult learners. UMGC will accomplish this by:

- (1) Operating as Maryland's open university, serving working adults, military servicemen and servicewomen and their families, and veterans who reside in Maryland, across the United States, and around the world;
- (2) Providing our students with affordable, open access to valued, quality higher education; and
- (3) Serving as a recognized leader in career-relevant education, embracing innovation and change aligned with our purpose and sharing our perspectives and expertise.

Each facet of UMGC's mission has direct bearing on the programs the university offers and how those programs are designed and delivered. By mission and state mandate, every aspect of the UMGC student experience is designed from its origins for working-adult and military-affiliated students to access online education and built to leverage our unique and longstanding expertise in designing online learning – whether fully online or in hybrid formats, which mix online learning with face-to-face instruction. The learning resources, the selection, training, and evaluation of faculty, the non-academic supports, the success-coach advising model, the virtual classroom, the academic resources, the term and session structure, and course length are all deliberately derived from adult-learning science in distributed, online modalities, and the learning ecosystem is designed for a learner experience taking place anywhere in the world. These students' demographic profile drives the design and delivery of our learning model: The average age of UMGC's undergraduate student is 31 years old, 79% of them work full-time, and 44% have dependent children. For these students, their often-complicated life circumstances while pursuing higher education means they need and benefit most from the authentic online education that UMGC has delivered for more than two decades and from UMGC's more than 75 years meeting working-adult and military affiliated students where they are to transform their lives through education.

Authentic online education is fundamentally different from courses and programs originating at traditional institutions and taught remotely in the same way as face-to-face classes. Instead, authentic online education is a distinctive educational architecture intentionally designed for virtual teaching, learning and assessment, with technology tools strategically deployed for engagement and outcomes, as well as wraparound services that provide support throughout the online student life cycle. These features set UMGC apart in the higher education landscape of Maryland.

Our history and expertise have allowed us to build strong relationships with the military community which is nothing less than part of UMGC's institutional identity. As of Fall 2021, 64% of UMGC's undergraduate students are military affiliated, including active duty servicemembers, their families, and Veterans. This dimension of UMGC's identity is a particular point of pride, beginning with the university first sending faculty overseas in 1949 to teach America's soldiers on military installations in Europe. The relationship between UMGC and the military has grown ever stronger in the decades since as a result of our intentional program design and delivery model that meets adult learners *where they are*, whether through asynchronous online courses or on military bases in Germany, Italy, Japan, Korea, Guam, Colorado, Virginia, and many other military facilities around the world.

Today UMGC holds competitively awarded contracts from the U.S. Department of Defense (DOD), under which we serve military servicemembers in Europe, Asia, and the Middle East, delivering specifically solicited programs of study identified by the DOD as responsive to the training, education, and upskilling needs of the military. UMGC is recognized as one of the top military- and veteran-friendly schools in the country, with an unmatched expertise and established reputation as a preeminent

provider of quality, affordable, career-relevant postsecondary education. Recognition as one of the Best Military Friendly Online Colleges (GuideToOnlineSchools.com) and as the Military Times No. 4 Best Cybersecurity Program for 2018, among other accolades, are evidence of UMGC's successful commitment to serving our nation's troops. Most recently, in 2019 UMGC was competitively selected as one of five partner institutions to the emergent U.S. Naval Community College to serve the Navy and Marines.

All of these considerations are reflected in UMGC's proposal herein to offer a new Bachelor of Science in Applied Technology degree. The proposed B.S. in Applied Technology is designed to meet the educational needs of a growing number of learners who have either not attended college at all, or who are near completers – having attained some college credit without completing a degree. Taken together, this so-called “degree completer” population makes up 60% of adults in the U.S.,¹ skewing older (average age 43) and toward racial and ethnic minorities (Black and Latinx learners represent 42.8%).²

The value of a college degree is difficult to overstate. An April 2022 report² from the Bureau of Labor Statistics (BLS) found that of the 1.3 million 20-to-29-year-olds who graduated with a bachelor's degree in the period from January to October 2021, almost 75% were employed, and the unemployment rate overall for recent graduates with a bachelor's degree is relatively low (13.1%). The degree completer population is also rising. A recent study³ reported that the degree completer population reached 39 million in 2020 (representing one in five adults in the U.S). The degree completer population has risen in all but two states (Nebraska, Connecticut). Nearly half (46%) of degree completers believe that they need additional education to attain their career goals and over 53% of them stated that they are likely to pursue further education in the next five years. Though a sizeable fraction of the large population of degree completers is interested in returning to college, they are seeking pathways to degree completion other than traditional degrees and conventional delivery methods. The three most important factors are career impact, affordability, and flexibility.⁴ Other factors include courses and programs of study that fit their schedule, that employers value, and that offer access to quality online education. Providing pathways to degree completion that respond to this large and growing sector of the U.S. workforce is critical to meet the job demand for skilled technology workers central to the socioeconomic strength of Maryland and the nation (see Section C below for more on job demand).

The State of Maryland has made college completion a critical priority for post-secondary learning. The Maryland State Plan for Higher Education⁵ sets the goal that 55% of Maryland's adults aged 25 to 64 will have completed some form of postsecondary education by the year 2025. Achieving this goal will require Maryland post-secondary education providers to offer a diverse array of degree-completion pathways aligned to institutional mission. As the largest online, global public university in the U.S. and an established leader in offering high-quality and affordable online education, UMGC is strategically positioned by mission and mandate to offer a degree-completion pathway for college completers that maximizes the application of prior learning credit toward the degree attainment. Our global, distributed, online and hybrid modalities allow us to provide an option for degree completers with a high degree of flexibility in the number and types of prior learning and credits that are applicable toward a college degree.

The new program in Applied Technology allows students to focus on a primary area of study drawn from among the current undergraduate computing and technology programs offered by UMGC's School of Cybersecurity and Information Technology, while also providing flexibility to apply other

¹ <https://stradaeducation.org/report/back-to-school/>

² <https://www.bls.gov/news.release/hsgec.htm>

³ <https://nscresearchcenter.org/some-college-no-credential/>

⁴ <https://stradaeducation.org/report/back-to-school/>

⁵ College and Career Readiness and College Completion Act of 2013 (CCRCCA) referenced in <http://www.tinyurl.com/studentssuccesswithlessdebt>

technology-related credits toward the degree from coursework and prior learning that does not apply exclusively to the primary focus area. These programs are aligned to the workforce demands in the cyber and IT marketplace. The increasing ubiquity of cybersecurity, data and computer science, and information technology skills required to power a global, increasingly digital and networked economy makes technology degrees a tremendous multiplier in enhancing job prospects in all domains of the technology workplace. By allowing learners to choose one computing area to focus on, based on their particular interests, abilities, and credits earned in prior learning, this program also gives graduates of the program an opportunity to gain entry-level positions in that area, while bringing a diverse background enriched by actual work experience and existing college-level courses. The degree is intentionally positioned as a B.S. in Applied Technology to distinguish it from more generalized degree-completion pathways offered by credentials in interdisciplinary studies, liberal studies, or general studies. This positioning helps employers more readily identify those applicants with a specific focus in technology learning and skills that may be overlooked when the same learning is packaged in one of the more generalist credentials.

The proposal aligns with UMGC's mission by providing a learner-focused program based on leading-edge adult learning theory and curriculum design that accommodates the needs of students and the community. In addition, this Applied Technology program aligns with UMGC's mission to offer high quality, workplace-relevant academic programs that expand the range of credentials and career opportunities for working adult, federally employed, and military affiliated students. The fully online, asynchronous program model offers flexibility, continuing education, and social opportunities to adults interested in refreshing and reshaping their career opportunities. Detailed descriptions of the program and courses within the major are in section G.

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

As the public state and national leader in distance and distributed education, UMGC awards associate, bachelor's, master's, and doctoral degrees, as well as undergraduate and post-baccalaureate certificates. The university's academic inventory offers programs that are core to any public university, but UMGC's mission to serve adult students results in a sustained academic emphasis on career-relevant and workforce-aligned programs. Consequently, the university awards degrees and certificates in the arts and humanities, behavioral and social sciences, business and management, health-related fields, computing, education, and technology. As part of its emphasis on career-relevant education, UMGC offers non-credit professional development programs and hosts professional conferences and meetings supporting economic and societal needs of the State.

The B.S. in Applied Technology is constructed using UMGC's institutional learning goals that help students master academic and professional content and include an emphasis on technology and information literacy. Applied Technology, as the name itself indicates, is a cross-disciplinary field, requiring synthesis and application of technical knowledge in computing with skills in other technology and technology-adjacent areas, chosen by the student, such as Health Care, Medical Research, Criminal Justice, Environmental Science, and Marketing. The program builds upon UMGC's general education requirements and a solid understanding of scientific and quantitative reasoning through required coursework in mathematics and computing.

Although IT professionals must possess a certain level of quantitative and technical expertise, it is also critical for them to develop the ability to gather and analyze requirements in order to respond to specific business problems of non-technical users and units in the workplace. Accordingly, critical thinking and problem-solving, communication, teamwork, and the ability to incorporate and collaborate with diverse perspectives are as critical as technical knowledge and skills in this domain, and so are assessed as part of the new program's outcomes.

The B.S. in Applied Technology requires students to complete nine credits (including 3 upper-level credits) within a specific computing discipline offered by the School of Cybersecurity and Information Technology.⁶ Students take an additional 18 credits in areas that are distinct from the specific discipline. Students complete the degree with a capstone course that requires the integration and application of the knowledge from the secondary area(s) to the computing skills acquired from the primary (computing) discipline. This structure gives students a high degree of flexibility to maximize the application of prior learning and college credits, while also ensuring that they have meaningful learning in the application of technology skills to real world business problems across the diverse range of careers and fields that rely on technology.

This program is strongly aligned to the Maryland State Plan for Postsecondary Education, which calls for universities to create greater opportunities and pathways for near completers to return to higher education and finish their degrees. UMGC's commitment to advancing the State Plan puts this proposed program in direct alignment with UMGC's statutory mandate and mission to provide career-relevant programs for adult learners (see Section 4B for more on the proposed program's alignment to the Plan).

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.)

No new general funds are required for the implementation of this program. With the exception of the capstone course, the courses within the primary discipline are drawn from existing courses; no new funds are needed for course development or faculty (see Tables 5 and 7). Selected courses within the School of Cybersecurity & Information Technology's existing offerings are projected to increase in enrollments because of new entrants to the proposed program, and each of the School's existing programs impacted by this proposal have adequate and built-in capacity to grow. The proposed program requires development of a new capstone course, which will be created and resourced through regular course development budgeting processes within the School's FY 2023 budget process. The financial table in section L is based only on students projected to enter the new program.

The success and effectiveness of degree-completion credentials like the proposed program is less about the ability to create new courses, since the proposed program draws from existing offerings. Instead, these types of degrees pivot on the institution's ability to comprehensively evaluate a range of prior learning and transfer credit and to expertly coach and mentor students in identifying the best pathway to completion based on their educational history, interests, and experience. UMGC's admissions and advising teams include experts in transfer credit evaluation and prior learning, including both college and applicable college-level learning completed outside an educational institution that UMGC is approved to evaluate and apply toward a degree (see Appendix E). Similarly, our admissions advisors provide personalized consultation to new and prospective students to help them choose the best degree option and plan.

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

⁶ The following bachelor's programs are currently offered by the School: Computer Science, Cybersecurity Management and Policy, Cybersecurity Technology, Data Science, Management Information Systems, Software Development and Security, and Web and Digital Design.

Certificate programs include the following: Augmented and Virtual Reality Design, Computer Networking, Cyber Threat hunting, Digital Design, Machine Learning, Management Information Systems, Vulnerability Assessment, and Web Design

UMGC's support services are designed to accommodate students who may not be physically in Maryland or who would simply prefer to access support remotely. These services are, therefore, intentionally and thoughtfully built for complete online delivery rather than in the primarily face-to-face format that exists on traditional campuses. Support services include the following:

- Success Coaches and Admissions Advisors assist students with mapping out degree plans, selecting and scheduling courses, and generally navigating the administrative and academic landscape of earning a degree or certificate.
- Help@UMGC provides support services for the learning management system (LMS). A specialized technical support team for LMS questions and problems is available 24 hours a day, seven days a week, 365 days a year. In addition, UMGC trains faculty to handle some LMS troubleshooting, publishes LMS FAQs, provides chat, phone, and e-mail access to a Help Center with a comprehensive knowledge base and includes a peer-to-peer feature in the online classroom to encourage students to help each other with LMS issues.
- The Integrative Learning Design unit within Academic Affairs provides instructional-design support and consultation to Help Desk staff and program leadership to optimize the learning environment across delivery modes and resolve challenges or obstacles students and faculty encounter.
- Students also receive 24/7 support in the use of educational technology from UMGC's Virtual Lab Assistance team, which resolves students' technical questions and issues in lab environments. Complementarily, program leadership and faculty support students in the proficiency of use with educational technology tools.
- MyUMGC is a self-service portal that provides access to administrative functions and student records. UMGC has designed this portal to ensure that students around the world can complete administrative tasks and view records at their convenience.
- UMGC's library is directly accessible through a link within each online classroom. The library helps to educate students in the use of information resources and services and develops and manages UMGC's extensive online library collection.
- The Effective Writing Center (EWC) offers an array of writing-related services to students, including review of draft papers, guest lecturers on writing skills for the classroom, a plagiarism tutorial, resources on citing and referencing, and resources to support research activities. The EWC is also directly accessible through a link within each online classroom.
- Turnitin has been integrated within courses as a developmental tool for students to assist with achieving authenticity in their writing.
- Subject matter tutoring is available in select courses. Subject matter tutors can help define and explain concepts, clarify examples from course content, and guide students toward understanding a particular topic. Students can connect with a subject matter tutor by accessing a link in their online classroom.
- The Office of Accessibility Services arranges accommodation for students with disabilities. Students can register with this office via an online form and then work with a staff member to receive appropriate accommodation for either online or hybrid courses. UMGC students move locations frequently and often need to adjust their course schedules because of work or family obligations so the Office of Accessibility Services is prepared to help students with transitioning their accommodations even when these changes occur.
- The Office of Career Services and its CareerQuest portal provides quality resources and services to assist students and alumni with their career planning and job search needs including Mentoring and Internship Plus programs. This office supports students who are transitioning from one career to another or are looking to climb up the corporate ladder, in addition to those who are entering the workforce for the first time. The CareerQuest portal is available 24 hours a day, seven days a week and includes an online database that allows students to connect with local and national hiring managers.

- The Alumni Association is a way for graduates to network and connect. Its online community features a career center, information on available chapters, discussion boards, photo sharing, and a resource center.
- The Financial Aid Office helps students understand and navigate the process of filing for financial aid. Extended office hours ensure that students can receive support quickly and staff members have expertise with a variety of financial aid options as UMGC students may be using employer assistance, veterans' benefits, or other aid that is more common among adult student populations.

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

This is not applicable as this program is new.

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**
- b) Societal needs, including expanding educational opportunities and choices for minority and educationally disadvantaged students at institutions of higher education**
- c) The need to strengthen and expand the capacity of historically black institutions to provide high quality and unique educational programs**

As an open access institution, UMGC makes educational opportunities and choices widely available for students within the state of Maryland, especially military affiliated, minorities, low-income, and working adults who are most often left behind by higher education. In the School of Cybersecurity and Information Technology, where the Applied Technology program will be located, approximately 66% of undergraduate students are military affiliated, of whom approximately 43% are active duty. UMGC's global reach means nearly 60% of students in the School of Cyber and IT live outside Maryland, including those enrolled overseas. The average age of the school's student population is 31, and 77% are enrolled part-time.

On average, UMGC students transfer 53 credits to the university; 40% of students transfer between 30-59 credits and approximately 43% transfer between 60-89 credits. Approximately 80% of UMGC students work full-time while enrolled in classes. UMGC is the largest educator of minorities in the cyber and IT fields in which we are invested.

Data⁷ from the college-completer population indicates that there are nearly 613,000 of these students in Maryland: 45 % are female, 72% last enrolled in a community college, and 24% last enrolled in a public 4-year institution. Among degree-completion students, women re-enroll to complete degrees at a higher rate than men,⁸ and ethnic and racial minorities report the greatest need for more higher education as well as the greatest likelihood of enrolling in order to complete a degree.⁹ In Maryland alone, the Census Bureau¹⁰ estimates that just 31% of Black residents had completed a bachelor's degree or higher.

⁷ <https://nscresearchcenter.org/some-college-no-credential-dashboard/>

⁸ <https://www.chronicle.com/article/finishing-what-they-started>

⁹ <https://www.chronicle.com/article/half-of-u-s-adults-without-degrees-want-more-education>, which cites results from a Strada-Gallup survey (<https://stradaeducation.org/report/back-to-school/>)

¹⁰ <https://data.census.gov/cedsci/table?t=Educational%20Attainment&g=0400000US24>

Accordingly, we anticipate that the proposed program, which has been specifically created to meet the needs of degree completers, will serve a disproportionate number of historically marginalized or excluded populations in the state of Maryland and beyond.

2. **Provide evidence that the perceived need is consistent with the [Maryland State Plan for Postsecondary Education](#).**

The program proposal is designed to meet present and future needs of the state, as identified in 2017-2021 State Plan for Post-Secondary Education: Student Success with Less Debt (State Plan).¹¹ This program supports the three primary goals in the State Plan in the following ways:

- The program serves Goal 1 (Access: Ensure equitable access to affordable and quality postsecondary education for all Maryland residents) in the State Plan in that it is designed to support UMGC's overall mission to set a global standard for excellence and to be respected as a leader in affordable and accessible adult education programs. In addition, UMGC administers its programs to meet the University System of Maryland goals of effectiveness and efficiency by employing data-driven decision making that ensures that academic programs are broadly accessible and offer high quality education at an affordable cost. At UMGC, this commitment to affordability and access is synonymous with a commitment to diversity and inclusion. The university's open admission approach is central to this commitment. The process to apply for admission is streamlined and does not require the submission of standardized test scores. Admission requirements for the B.S. Applied Technology are aligned with this mission.
- The program serves Goal 2 (Success: Promote and implement practices and policies that will ensure student success). Students are provided with a variety of academic and administrative support structures to help them succeed. Most courses at UMGC rely on the use of Open Educational Resources, which are in most cases available at low or no cost to students. Success coaches are available to students to help support students' continuous enrollment and success to graduation. Courses in subject matters that are generally difficult for students (e.g., Mathematics, programming) are supported by tutoring services. Finally, UMGC has created a new faculty training course which will train all faculty to focus on the individual needs of each student and adopt coaching strategies to help students succeed. The program further supports Goal 2 because it is specifically based on practices and policies that recognize and optimize college-level learning experiences to allow a diverse array of transfer credit while also providing students with choices to individualize their learning and degree pathways.
- The program serves Goal 3 (Innovation: Foster innovation in all aspects of Maryland higher education to improve access and student success). The approach to learning in UMGC courses is learner-focused, and authentic assessment (the measurement of what students have learned and the competencies students master) is embedded in every step of the learning process to assist students in building real-world, job-relevant competencies in real time. The Applied Technology program will employ authentic, project-based assessments in its courses. Such projects serve as both the means of instruction and assessment of learning in the program. Retention and success focus on students' learning experiences and are improved through enhanced learning resources. These resources are provided online within the learning management system. The methodology and on-demand nature of this type of student support is innovative in higher education and online learning, thus reflective of best practices in adult teaching and learning.

¹¹ Source: 2017-2021 Maryland State Plan for Postsecondary Education:
<http://www.mhec.state.md.us/About/Pages/2017StatePlanforPostsecondaryEducation.aspx>

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.
2. Present data and analysis projecting market demand and the availability of openings in a job market to be served by the new program.
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 seven bachelor’s degree programs offered by the School of Cybersecurity and Information Technology are:

- Computer Science
- Software Development and Security
- Cybersecurity Technology
- Cybersecurity Management and Policy
- Management Information Systems
- Web and Digital Design
- Data Science

The industry demand for generalists in Applied Technology is rapidly increasing and encompasses those learners with entry-level skills in some mix of basic computer programming, information technology, technical support, network configuration, incident response, cybersecurity risk assessment, Microsoft Office and productivity tools, web content design, user interface and user experience (UI/UX) design, and data analysis techniques. These are all skills taught within the seven disciplines covered by the School. Burning Glass data project that market demand for careers in Applied Technologies as defined above will grow by an average of 25.5% over the next ten years.

The proposed program is designed so that students select their primary area of study from among the School’s seven degree programs through an evaluation of their prior learning, the maximal application of transfer credit, and professional interest. Accordingly, the analysis in this section considers the job demand for each of the existing bachelor’s programs from which degree completers may select a primary area of focus in the proposed Applied Technology program. Within these fields, the proposed program is designed to prepare graduates for entry-level jobs that are primarily technical, or entry- to mid-level jobs in non-technical fields that include roles that have a technical dimension to core responsibilities. Job titles include, but are not limited to: Junior Java Developer, Help Desk Technician, Network Support Technician, Risk Analyst, IT Auditor, Systems Analyst, Junior Business Analyst, Web Content Designer and Producer, entry-level Data Scientist and Analyst.

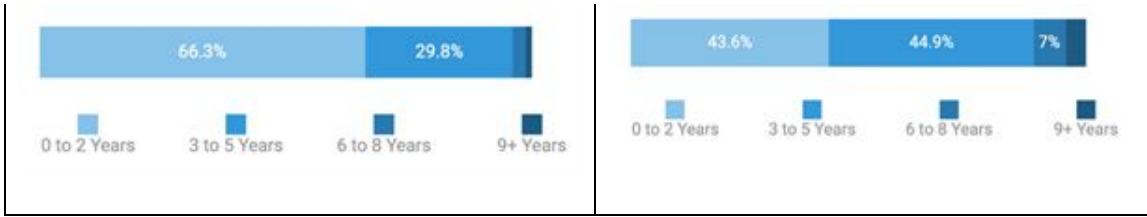
Table 1 provides job-demand data and job-growth trends for the seven bachelor’s degree programs within the School, and job-demand and job-growth information for two of the most common job titles within each area, along with a breakdown of job growth across years of experience in that role. The proposed program is designed for learners with 0-5 years of experience.












Table 1: Job Demand and Growth in the Primary Areas of Study for Proposed Program

Computer Science / Software Development and Security
Skills: Basic Programming

<p>Job Postings Last 12 Months</p> <p>Medium Demand 373,718</p>		<p>Projected Growth 2 Years</p>	
<p>Occupation Analysis Java Developer / Engineer</p>		<p>Occupation Analysis Python Developer</p>	
<p>Common Job Titles Java Developer, Junior Java Developer, Entry-Level Java Developer, Java Engineer</p>		<p>Common Job Titles Python Developer, Python Engineer</p>	
<p>Job Postings Last 12 Months</p> <p>High Demand 90,553</p>		<p>Projected Growth 10 Years</p>	
<p>Job Postings Last 12 Months</p> <p>Average Demand 26,858</p>		<p>Projected Growth 10 Years</p>	
<p>Years of Experience</p>		<p>Years of Experience</p>	

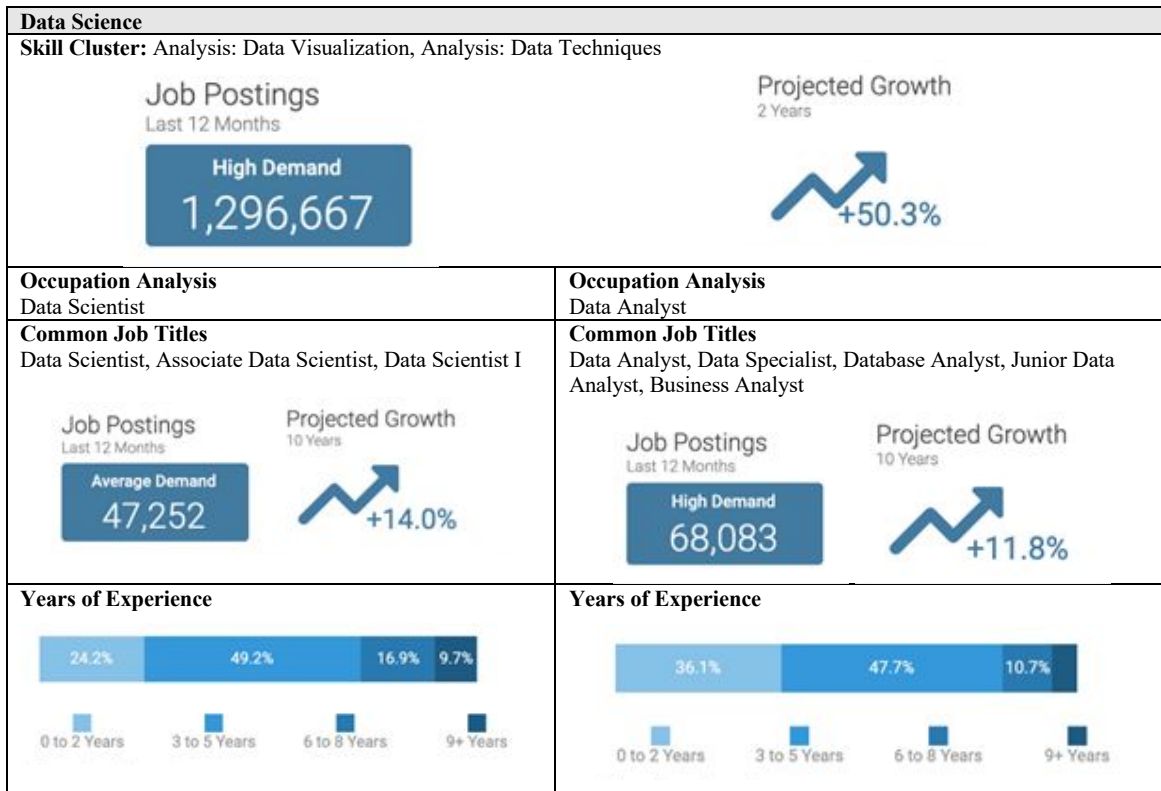
<p>Cybersecurity Technology</p>			
<p>Skill Cluster: Information Technology, Basic Computer Knowledge, Information Technology: Technical Support, Information Technology: Network Configuration, Information Technology: General Networking</p>			
<p>Skill: Laptop Troubleshooting</p>			
<p>Job Postings Last 12 Months</p> <p>High Demand 2,689,972</p>		<p>Projected Growth 2 Years</p>	
<p>Occupation Analysis Help Desk Technician</p>		<p>Occupation Analysis Network Support Technician</p>	
<p>Common Job Titles Help Desk Technician, Field Service Technician, Help Desk Analyst I, Service Desk Analyst</p>		<p>Common Job Titles Network Technician, Noc Technician, Network Support Specialist, Communications Technician, Noc Engineer</p>	
<p>Job Postings Last 12 Months</p> <p>High Demand 70,159</p>		<p>Projected Growth 10 Years</p>	
<p>Job Postings Last 12 Months</p> <p>Average Demand 13,216</p>		<p>Projected Growth 10 Years</p>	
<p>Years of Experience</p>		<p>Years of Experience</p>	



<p>Cybersecurity Management and Policy</p> <p>Skill: Computer Security Incident Response, Cybersecurity Assessment, Risk Assessment</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>Job Postings Last 12 Months</p> <div style="background-color: #0056b3; color: white; padding: 5px; border-radius: 5px;"> <p>Medium Demand</p> <p style="font-size: 24px; font-weight: bold;">246,546</p> </div> </div> <div style="text-align: center;"> <p>Projected Growth 2 Years</p>  <p style="font-size: 24px; font-weight: bold;">+3.3%</p> </div> </div>	
<p>Occupation Analysis Risk Analyst</p> <p>Common Job Titles Risk Analyst, Risk Management Analyst, Risk Analyst I</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>Job Postings Last 12 Months</p> <div style="background-color: #0056b3; color: white; padding: 5px; border-radius: 5px;"> <p>Average Demand</p> <p style="font-size: 24px; font-weight: bold;">15,061</p> </div> </div> <div style="text-align: center;"> <p>Projected Growth 10 Years</p>  <p style="font-size: 24px; font-weight: bold;">+0.3%</p> </div> </div>	<p>Occupation Analysis IT Auditor</p> <p>Common Job Titles IT Auditor, IT Internal Auditor</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>Job Postings Last 12 Months</p> <div style="background-color: #0056b3; color: white; padding: 5px; border-radius: 5px;"> <p>Average Demand</p> <p style="font-size: 24px; font-weight: bold;">9,206</p> </div> </div> <div style="text-align: center;"> <p>Projected Growth 10 Years</p>  <p style="font-size: 24px; font-weight: bold;">+21.3%</p> </div> </div>
<p>Years of Experience</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>28.9%</p>  <p>0 to 2 Years</p> </div> <div style="text-align: center;"> <p>46.1%</p>  <p>3 to 5 Years</p> </div> <div style="text-align: center;"> <p>15.6%</p>  <p>6 to 8 Years</p> </div> <div style="text-align: center;"> <p>9.4%</p>  <p>9+ Years</p> </div> </div>	<p>Years of Experience</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>20.7%</p>  <p>0 to 2 Years</p> </div> <div style="text-align: center;"> <p>56.2%</p>  <p>3 to 5 Years</p> </div> <div style="text-align: center;"> <p>16.4%</p>  <p>6 to 8 Years</p> </div> <div style="text-align: center;"> <p>6.7%</p>  <p>9+ Years</p> </div> </div>

<p>Management Information Systems</p> <p>Skill Cluster: Information Technology: Microsoft Office and Productivity Tools</p> <p>Skill: Systems Analysis</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>Job Postings Last 12 Months</p> <p>Very High Demand</p> <p>8,095,271</p> </div> <div style="text-align: center;"> <p>Projected Growth 2 Years</p> <p>+3.7%</p> </div> </div>	
<p>Occupation Analysis Systems Analyst</p> <p>Common Job Titles Systems Analyst, Systems Support Analyst, IT Systems Analyst</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>Job Postings Last 12 Months</p> <p>Average Demand</p> <p>27,046</p> </div> <div style="text-align: center;"> <p>Projected Growth 10 Years</p> <p>-2.1%</p> </div> </div>	<p>Occupation Analysis Junior Business Analyst</p> <p>Common Job Titles Business Analyst, Junior Business Analyst, Entry Level Business Analyst, Planning Consultant, Business Analyst II</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>Job Postings Last 12 Months</p> <p>Average Demand</p> <p>27,046</p> </div> <div style="text-align: center;"> <p>Projected Growth 10 Years</p> <p>+8.9%</p> </div> </div>
<p>Years of Experience</p> <p>23.9% 47.3% 17.7% 11.2%</p> <p>0 to 2 Years 3 to 5 Years 6 to 8 Years 9+ Years</p>	<p>Years of Experience</p> <p>97.1%</p> <p>0 to 2 Years 3 to 5 Years 6 to 8 Years 9+ Years</p>

<p>Web and Digital Design</p> <p>Skill Cluster: Information Technology: Web Content, Design: User Interface and User Experience (UI/UX)</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>Job Postings Last 12 Months</p> <p>Medium Demand</p> <p>470,256</p> </div> <div style="text-align: center;"> <p>Projected Growth 2 Years</p> <p>+8%</p> </div> </div>																					
<p>Occupation Analysis Web Designer</p> <p>Common Job Titles Web Designer, Website Designer, Interactive Development Designer, Graphic and Web Designer</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>Job Postings Last 12 Months</p> <p>Low Demand</p> <p>4,766</p> </div> <div style="text-align: center;"> <p>Projected Growth 10 Years</p> <p>+5.5%</p> </div> </div>	<p>Occupation Analysis Web Content Producer</p> <p>Common Job Titles Content Producer, Web Producer, Interactive Producer, Web Production Specialist, Web Content Designer</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>Job Postings Last 12 Months</p> <p>Low Demand</p> <p>2,012</p> </div> <div style="text-align: center;"> <p>Projected Growth 10 Years</p> <p>+8.7%</p> </div> </div>																				
<p>Years of Experience</p> <table border="1"> <thead> <tr> <th>Experience Range</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>0 to 2 Years</td> <td>27%</td> </tr> <tr> <td>3 to 5 Years</td> <td>59.6%</td> </tr> <tr> <td>6 to 8 Years</td> <td>10.3%</td> </tr> <tr> <td>9+ Years</td> <td>9.7%</td> </tr> </tbody> </table>	Experience Range	Percentage	0 to 2 Years	27%	3 to 5 Years	59.6%	6 to 8 Years	10.3%	9+ Years	9.7%	<p>Years of Experience</p> <table border="1"> <thead> <tr> <th>Experience Range</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>0 to 2 Years</td> <td>32.1%</td> </tr> <tr> <td>3 to 5 Years</td> <td>56%</td> </tr> <tr> <td>6 to 8 Years</td> <td>9.7%</td> </tr> <tr> <td>9+ Years</td> <td>9.7%</td> </tr> </tbody> </table>	Experience Range	Percentage	0 to 2 Years	32.1%	3 to 5 Years	56%	6 to 8 Years	9.7%	9+ Years	9.7%
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4. Provide data showing the current and projected supply of prospective graduates.

One way to project enrollment rates and degree production in the Applied Technology program is to look at the enrollment trends in UMGC’s B.S. in General Studies program, a general college-completion credential that allows students to include computing and technology learning and credits, although those courses are not required to be the primary focus. The General Studies program was approved for UMGC’s academic program portfolio many years ago but was promoted more heavily beginning in AY 2018-2019 as an option for degree-completers who did not need a specific degree focus. In AY 2019-2020, the General Studies program enrolled 922 students. Last year, the program enrolled 1,566 students. These enrollment numbers show encouraging and durable prospective student demand for the B.S. in Applied Technology, especially given the proposed program’s more specific address to the technology job market, as opposed to the more diffuse “General Studies.”

A companion metric that provides potential indication of interest in the program comes from the population (1,615) of current students who have at least 6 credits in various programs affiliated with the School but no more than 36 credits total in those programs. These students likely have an interest in a technical degree but aren’t sure which program to choose. For many learners in this subpopulation, the proposed program would likely offer a faster track to degree completion by maximizing the application of technology learning credits toward graduation.

Table 2: 5-year Headcount Enrollment Projections

	Year 1	Year 2	Year 3	Year 4	Year 5
Projected Enrollment	25	100	200	300	400

We project to award approximately 100 degrees each year after the degree is established and reaches steady state.

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

Academic programs with the “Studies” suffix are a staple of college curricula, meant to provide a program of study to students who have wide-ranging interests and prior credits that are not confined to the singular focus of one discipline-specific area. These programs are particularly important for degree completers because such programs allow a path to graduation for students who have a significant number of credits spread across multiple areas of study. Within this type of offering, academic programs often use the “Applied” prefix to indicate programs in which a subset of courses create areas of focus within certain meta-majors or career-field clusters.

The proposed program is designed in this way, with a goal of teaching students to apply computing technology skills across a range of fields and careers. Accordingly, when analyzing program duplication, we focused on related programs within the MHEC inventory that use one or more or some combination of the keywords “Studies,” “Applied,” and “Technology.”¹² In some cases, the MHEC inventory identifies active credentials that the institution itself does not publicly indicate as available. In those cases, our analysis excludes such programs from comparison, but we have noted such instances in Table 2 below.

The MHEC inventory documents 558 offerings of this type across all degree levels – Associates, Bachelors, Masters (see Appendix D for the full list). **This search did not reveal the existence of any bachelor’s program with the name selected for this proposed program, “Applied Technology.”** MHEC’s history of approving so many credentials in the “Studies” model reinforces and aligns to the market data and job-demand trends, which point, as we have shown above, to the value of and need for a multiplicity of degree-completion credentials as an important channel of degree production and workforce supply. The proposed program is designed to serve students who have had frequent changes in major and institutional affiliation at the post-secondary level. The design and policies governing most degrees disadvantage these students by disallowing the application of transfer credit and other college-level prior learning that does not articulate directly to a single major or discipline. This degree empowers these learners to maximally leverage the application of prior learning toward degree completion.

Our analysis eliminated the following credentials from a detailed comparison:

- Associates, Masters, and all certificate programs (these are not at the same level as the proposed Bachelor’s-level program)
- Bachelor’s programs that have a very specific non-computing focus (e.g., “German Studies,” “Bio-Technology,” “Applied Psychology” etc.)
- Bachelor’s programs that have a very specific and exclusive computing focus on a single discipline or field (e.g., “Computer Engineering Technology”) and do not allow inclusion of courses from other disciplines.

¹² https://mhec.maryland.gov/institutions_training/Pages/searchmajor.aspx , Accessed Aug. 14, 2022, 4 P.M.

After eliminating the types of credentials and programs noted above, 22 existing programs were similar in enough ways to merit a specific comparison with the proposed Applied Technology program. We provide analysis of each below.

However, taken together, the large number of such approved, existing programs in the state strongly indicates that degree-completion credentials are – *prima facie* – complementary and crucial for achieving the State Plan’s goal for increasing degree attainment, especially among degree-completers. In this light, we see no harmful or unnecessary duplication of any existing program from our proposed program and anticipate approval based on the Commission’s longstanding practice of supporting and approving a diverse array of degree-completion credentials across Maryland higher education.

Across all comparison programs, there are several common points of differentiation from the proposed program.

- **The proposed program’s intentional focus on blending computing with a complementary area to which computing skills are applied.** Several of the comparison programs require in excess of 20 computing credits, which means that while they provide flexibility in the types of computing credits that can be applied toward the degree, they nevertheless tilt heavily toward an overwhelming focus on computing itself. The proposed program’s structure ensures a critical mass of skill development in computing skills (12 credits total, 6 at the upper level, including the capstone) combined with companion credits in coursework that becomes, in the capstone, the context in which students learn the effective application of those computing skills to a range of possible disciplines and fields.
- **The proposed program’s inclusion of the widest array of ways to apply transfer credit and prior learning.** UMGC is nationally recognized as a leader in awarding transfer credit, including a recent recognition by U.S. News and World Report as the No. 1 institution in the nation for transfer credit friendliness.¹³ UMGC is also a leading higher-education innovator in the evaluation of non-ACE accredited college-level workplace learning (see Appendix E for permission from MHEC for UMGC to assess non-ACE-evaluated trainings for credit). The proposed program leverages this institutional strength in meeting students where they are in order to maximize the number of credits applied toward the Applied Technology program based on the evaluation of prior learning and transfer credit. Students can earn credit for prior learning in a variety of ways:
 - Transfer credit of articulated coursework from other accredited institutions, including community colleges (UMGC students can transfer up to 70 credits from community colleges.)
 - Credit for unexpired industry certifications aligned to UMGC courses (There are currently 54 courses in the School of Cyber and IT linked to industry certifications in this way.)
 - Portfolio evaluation
 - Challenge exams
 - Credit for non-ACE accredited college-level learning articulated to UMGC coursework

¹³ <https://globalmedia.umgc.edu/2022/03/09/seamless-pathway-for-transfer-students-earns-umgc-top-spot-on-u-s-news-short-list-ranking/>

- **The proposed program’s distinction as the online program for degree completers that can be completed fully asynchronously online**, with hybrid options available in many instances.

The existing programs in the comparison group of 22 programs use purposefully broad constructs (all are either “Interdisciplinary” or “General” Studies degrees). In some cases, the comparison programs do not exclude the application of computing or technology learning and credits but do not specifically require them; in other cases, the comparison program is focused more tightly on computing or technical learning and requires some amount of credit and coursework in a computing or technology area

In the analysis that follows, we focus on whether computing courses can be selected as part of the program, and if so, if any minimum number of computing credits are required. References to “computing courses” below exclude general-education courses in computing that may be required for graduation and instead refers only to courses drawn from specific computing majors.

Table 3: Comparison Program Analysis

	Requires primary computing area of focus	Allows pairing of computing & non-computing areas	12 or fewer credits in computing area	Fully asynchronous online	6 or fewer UL credits in Major	CIP Code	Notes
Proposed UMGC program, Applied Technology	X	X	X	X	X	11.0101	
Coppin State University, Interdisciplinary Studies		X				24.0101	Includes a 4-credit Internship. UL requirements not clear
Hood College, Interdisciplinary Studies						30.9999	Program not found on Institution's website
Johns Hopkins University, Interdisciplinary Studies						24.0101	Only allows disciplines only within School of Arts & Sciences
Loyola University Maryland, Interdisciplinary Studies		X				30.9999	Requires 12 courses from a list of Math and Computer Science courses, including 6 at the UL
Morgan University, Applied Liberal Studies		X				24.0101	Requires at least 36 UL courses, and 18 credits of external experiences
Mount St. Mary's University, General Studies/ Interdisciplinary		X	X			30.9999	UL requirements not clear
Salisbury University, Interdisciplinary Studies		X				24.0101	Requires at least 30 UL credits
Stevenson University, Interdisciplinary Studies				X		30.9999	Requires at least 18 UL credits
Towson University, Interdisciplinary Studies						30.0000	Requires a minimum of 45 credits in a single area of study; all courses must be at the UL
Univ. of Maryland Eastern Shore, General Studies		X				30.9999	Requires at least 45 upper-level credits
University of Baltimore, Interdisciplinary Studies		X				30.9999	Requires minimum of 12 upper-level credits in three specialization areas. At least one of the three specializations should be an Arts & Sciences discipline.
Washington Adventist University, General Studies						24.0102	Offered only face-to-face; students must choose one of two non-technology concentrations
Washington Bible College, General Studies							Program not found on Institution's website
Bowie State University, Computer Technology	X			X		11.9999	Requires 60 credits in computer technology and computer science
Morgan University, Interdisciplinary Engineering, Information, and Computational Sciences		X				30.7099	24 credits of LL courses, and 24 UL credits from courses offered by one of the following Schools: Liberal Arts; Business Management; Computer, Mathematical and Natural Science; or Engineering. Also needs at least 1 credit of Professional Field Experience

	Requires primary computing area of focus	Allows pairing of computing & non-computing areas	12 or fewer credits in computing area	Fully asynchronous online	6 or fewer UL credits in Major	CIP Code	Notes
Morgan University, Interdisciplinary Global Perspectives and Practices		X				30.2001	24 credits of LL courses, and 24 LL credits from courses offered by one of the following Schools: Liberal Arts; Architecture and Planning; Business Management; Community Health and Policy; Computer, Mathematical and Natural Science; Education and Urban Studies; Engineering; Global Journalism and Communication; or Social Work. Also needs at least 1 credit of Professional Field Experience
Morgan University, Interdisciplinary Sciences		X				30.1801	24 credits of LL coursework and the same number of UL credits courses offered by one of the following Schools: Liberal Arts; Community Health & Policy; Computer, Mathematical and Natural Sciences; or Education and Urban Studies. Also needs at least 1 credit of Professional Field Experience
Morgan University, Interdisciplinary Technology Services		X				30.0801	24 LL credits, and 24 UL credits from courses offered by these Schools: Liberal Arts; Business & Management; Computer, Mathematical, and Natural Sciences; or Engineering. Also needs at least 1 credit of Professional Field Experience
Morgan University, Interdisciplinary Organizational Administration		Unclear				30.9999	24 LL credits and 24 UL credits in courses from the following Schools: Liberal Arts; Business Management; Community Health and Policy; or Engineering. Also needs at least 1 credit of Professional Field Experience
Morgan University, Interdisciplinary Studies in Societal Equity and Urbanism		Unclear				45.1201	24 LL credits and the same number of UL credits in courses from the following Schools: Liberal Arts; Architecture and Planning; Business Management; Education and Urban Studies; or Social Work. Also needs at least 1 credit of Professional Field Experience
SANS Technology Institute, Applied Cybersecurity	X	X				11.1003	50 credits focused on cybersecurity; 70 credits transferred from accredited college
University of Baltimore, Applied Information Technology	X					11.0401	Specific focus on computer networking and developing desktop or server-based applications

Notably, no comparison program shares the proposed program's CIP code. While this analysis documents that the proposed program's most distinct features – namely, its CIP code, the requirement of a primary area of focus in computing or technology discipline, its flexible credit structure across the primary and secondary areas, and its fully online, asynchronous modality – distinguish it from the comparison programs, it is also the case that this program shares (by design) a basic curriculum architecture with all comparison programs.

While it may appear that University of Baltimore's B.S. program in Applied Information Technology bears some superficial resemblance to the proposed program in title and CIP code, a closer look will reveal significant differences. University of Baltimore's program requires completion of a required core (30 credits) of computing courses which covers areas such as programming (6 credits), computer networks, computer security, web programming, database systems, etc. Students then need to complete 18-24 credits in a track which reflects one of the areas covered in the core. UMGC's program does not have this specific focus on the development of desktop or server-based applications. The total computing requirements for the program come to at least 48 credits (compared to 12 for the UMGC program). The upper-level requirements are different – Baltimore's program will need at least 33 upper-level computing credits (UMGC's needs only 6). Finally, it does not appear as if Baltimore's program is available online¹⁴.

That so many similarly structured degree-completion credentials have been approved attests to the size of the college-completion crisis in the U.S. As we have shown above, the market demand and learner need for college-completion degree options exceeds the ability of any single institution in Maryland or elsewhere to reasonably supply near-completers, and our evidence and analysis document the ways UMGC is well suited to offer a quality online degree-completion credential focused on technology and computing for working-adult and military-affiliated students around the world.

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 HBIs.**

AND

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.**

As detailed above, each of the four Historically Black Institutions in Maryland (Bowie State University, Coppin State University, University of Maryland Eastern Shore, and Morgan State University) - like the majority of four-year degree-granting institutions in the state – has one or more degree-completion programs, but, as Table 2 illustrates, each of those programs differs significantly in credit-allocation allowances compared to from proposed Applied Technology program. Table 4 provides a complete list of such programs at Maryland's HBIs.

¹⁴ <https://www.ubalt.edu/academics/online-programs.cfm>

Table 4: Interdisciplinary programs offered by HBIs

Coppin State University	Interdisciplinary Studies
Univ. of Maryland Eastern Shore	General Studies
Bowie State University	Computer Technology
Morgan University	Applied Liberal Studies
Morgan University	Interdisciplinary Engineering, Information, and Computational Sciences
Morgan University	Interdisciplinary Global Perspectives and Practices
Morgan University	Interdisciplinary Sciences
Morgan University	Interdisciplinary Technology Services
Morgan University	Interdisciplinary Organizational Administration
Morgan University	Interdisciplinary Studies in Societal Equity and Urbanism

As has been demonstrated in Section 4.D, each of these programs differs significantly from UMGC’s program in keyways, namely in the number and nature of allowed computing credits and offering modality. Moreover, there is no publicly available information provided by these institutions to indicate that they classify these programs as high demand. For these reasons, we see no negative impact on HBIs in Maryland.

The proposed program will function as a complement to HBI offerings mainly by serving those students who stop out of traditional programs at these and other institutions and require the particular type of flexibility and distance modalities of which UMGC is the leading provider in 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.

UMGC’s program is modeled on its existing B.S. program in General Studies (Hegis: 499901; CIP: 309999). This program allows college completers who have concentrations of courses in at least two separate areas a pathway to completing a bachelor's degree.

The new program adapts the flexibility and customization of transfer-credit application to serve learners with a primary focus on computing and technology. This adaptation includes three signal attributes distinct from the B.S. in General Studies:

- The degree name specifically focuses on the application of technology skills in order to provide learners with a credential that is readily recognizable to industry employers who might otherwise deprecate, deprioritize, or overlook applicants with a “General Studies” degree in the hiring process.
- The primary area of study is anchored in computing: students must take courses (9 credits, including 3 at the upper level) required by one of the computing programs offered by the School of Cybersecurity and Information Technology.
- Only one primary area (in computing) is required. Students may distribute 18 credits from any other area (including other computing areas), avoiding overlap with the chosen primary area.

The proposed program will be taught entirely online in asynchronous mode and will allow UMGC to further support its mission to teach adult learners in Maryland, across the U.S., and around the world. This proposal aligns with UMGC’s mission to offer high quality, workplace-relevant academic programs that expand the range of career opportunities to adult students. Specifically, the addition of the B.S. Applied Technology diversifies credential options for working adult and military-affiliated

populations, responding to adult learners' need for a variety of pathways to completed credentials in higher education.

The proposed program will be hosted in the School of Cybersecurity and Information Technology's Department of Information Technology and will be managed concurrently with the Computer Science program by the Program Director, Dr. Chandra Bajracharya.

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

The major in the proposed program consists of 10 courses (30 credits, see Section G.4.). Depending on the primary discipline selected by the student, certain courses may have prerequisites, requiring students to take them in a prescribed order.

Program Learning Goals are as follows:

- PLG1: Apply critical thinking and quantitative reasoning skills while using computing technologies and methodologies
- PLG2: Combine concepts and practices in modern Information Technology (IT) and Information Systems (IS) along with fundamental concepts in other fields to develop computing-based multi-dimensional approaches to problem-solving
- PLG3: Develop oral and written communication skills, to present computing-based solutions to complex problems
- PLG4: Analyze insights about personal and professional goals

Appendix C shows the mapping of the program learning goals to the core courses in the major.

3. Explain how the institution will:

- a) **provide for assessment of student achievement of learning outcomes in the program**
- b) **document student achievement of learning outcomes in the program**

UMGC approaches learning design from an "Understanding by Design" perspective, utilizing a backward design model. This approach begins with identifying the program learning goals that a student will achieve through the program of study. The program learning goals are mapped first to the Degree Qualification Program (DQP) to ensure that the set of learning goals are comprehensive and appropriate for the degree level. In addition, the program learning goals are mapped against UMGC institutional learning goals to validate that the program aligns with the university mission and institutional goals.

Once the program learning goals have been validated through mapping to the DQP and institutional learning goals, the program learning goals are mapped to the courses in the program. This step ensures that all program learning goals are addressed in the curriculum and provide guidance in the development of the courses to ensure that each course contributes to the program learning goals without unnecessary duplication of outcomes across courses.

Using the mapping of institutional learning goals to courses, key assignments are identified in courses for use in assessing student achievement of program learning goals. Periodically, a random sample of student artifacts for these identified key assignments are collected and reviewed by faculty to assess how effectively students are meeting the program learning goals.

Using student learning assessment results along with non-direct measures of student learning including student retention and market and labor data, program directors produce an annual review of program quality. For new programs, these annual reviews are integrated into an Academic Program Review including external review after 5 years. After this initial review, programs continue the annual review every year with an Academic Program Review every seven years.

In November 2020, UMGC licensed AEFIS as its assessment management system. AEFIS is the central repository for program learning goals, assessment maps, and student artifacts. AEFIS integrates with the UMGC’s learning management system (LMS) to allow student work to be copied from the LMS into AEFIS for assessment purposes. This process ensures that assessment review is independent of grades and evaluation within the class and allows for independent review of student work apart from the classroom faculty. AEFIS also stores annual program review reports.

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

The proposed B.S. Applied Technology requires 120 credits of coursework with degree requirements as follows:

General Education Courses:	41 credits
Major Courses:	30 credits
Electives/Minor Courses:	49 credits

Total:	120 credits

- Major Courses:
 - 3 courses (9 credits) that are each from the primary focus area and required courses within that area (see Section C3 for a complete list of primary focus areas). At least 3 credits (1 course) must be at the upper level.
 - 18 credits from any discipline areas (can be outside the School). Here, the credits may be earned in multiple disciplines (even more than two). It is recommended that most of the 18 credits come from courses and programs outside the primary technology discipline area (but they can come from other areas in the School).
 - 3 credits BSAT 495 Capstone (new course, to be created)
- No more than 21 credits of coursework in a single discipline
- At least 15 credits within the major must be at the upper-level. Excluding the two upper-level classes (3 credits each) already listed above (one course within the primary focus area, and the capstone), nine of the remaining 24 credits in the major must therefore be at the upper-level.
- Students must meet the 30-credit requirement overall for coursework taken at UMGC, but those credits may be earned in any combination across major, general education, and elective courses.

Course descriptions for all current courses within UMGC’s inventory can be obtained from the UMGC catalog.¹⁵

¹⁵ <https://www.umgc.edu/content/dam/umgc/documents/upload/2022-2023-catalog.pdf>

BSAT 495: Capstone in Applied Computing

Prerequisites: 27 credits in the major. This course is the culminating experience within the major. A project-based application of computing knowledge and skills to solve problems. Students research, plan, and implement a computing-based solution to an approved business and disciplinary-based problem outside the primary area of technology or computing focus. Assignments include working in teams through the planning, analysis, design, implementation, testing and documentation phases. Students present their applied solutions as the final learning demonstration in the course.

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

All UMGC undergraduate students are required to complete 41 credit hours in general education requirements. These requirements include courses in writing and communications, arts and humanities, social and behavioral sciences, natural sciences, mathematics, technology, and research. See Appendix B for a list of suggested general education courses and electives.

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

N/A

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

N/A

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 systems, availability of academic support services and financial aid resources, and costs and payment policies.

UMGC maintains a comprehensive website that houses all updated information about its programs. Students will have access to degree requirements, course catalogs, course schedules, and other pertinent information about the program.

The website also provides specific and clear information about technology requirements for UMGC students, information and training on the learning management system, and other resources to maximize students' learning experience.

A variety of support services are available to students for academic assistance (Tutoring, Writing Center), as well as technical support and financial aid.

UMGC students are guided by the Student Handbook that is available online and serves as a general guide for all current and prospective students.

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.

All Applied Technology-related communications (advertising, recruiting and admission materials) are developed in conjunction with UMGC-wide institutional communication strategy, which adheres

to the principle of truth in advertising. All written and electronic materials prepared for prospective students for the purpose of recruitment will accurately and clearly represent the courses, the program, and services available.

H. Adequacy of Articulation

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

UMGC has a number of existing articulations with community colleges, both within the state of Maryland and nation-wide, in most discipline areas, including computing, reflecting the national and international reach of our service capacity. UMGC has a generous transfer policy – accepting up to 70 credits from community colleges – and as the proposed program is a completion degree, it is specifically designed to be flexible in terms of transfer credit. By design, this program does not rely on a specific set of course-by-course matches in the major; instead, the courses can come from a wide range of disciplines. Community college students with degrees in all disciplines can seamlessly transfer and apply credit. In addition, we also offer a “completion scholarship,” whereby students who complete their 2-year degree at a Maryland community college are guaranteed admission to UMGC as well as a tuition rate which will allow recipients of the scholarship to complete the four-year degree for \$12,000 or less.

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 faculty member will teach in the proposed program.

UMGC’s model employs full-time faculty (known as collegiate faculty) in academic-program leadership roles, such as Department Chairs and Program Directors, with responsibility for the overall intellectual coherence and integrity of the program. Other collegiate faculty teach and serve in complementary roles that maintain and support the academic programs, providing input into the design and content of the program and their courses. This core group of full-time collegiate faculty support the Adjunct faculty in teaching the program courses.

In keeping with UMGC’s emphasis on workplace relevance, the B.S. Applied Technology teaching faculty will be drawn from our large, existing pool of practicing professionals who teach part-time for UMGC. These adjunct faculty already provide instruction for the majority of courses that will be used in this program (all are existing courses). Such scholar-practitioner faculty who have solid academic credentials and continue to work outside the university provide a continuous infusion of current workplace knowledge, career-relevant perspectives, and maximum flexibility for adapting to changing student demand and rapidly changing industries and technologies. In this way, UMGC supports students in a learning experience that is practical and relevant to today’s competitive and evolving global marketplace. Many adjuncts who teach for UMGC have considerable experience with the institution. Collegiate and adjunct faculty both hold academic rank and title, based on their academic qualifications and professional experience, including teaching experience at UMGC. Since 1996 UMGC has held a MHEC-approved waiver of the Code of Maryland (COMAR) requirements for total credit hours taught by full-time faculty (Appendix A).

The centrality and appropriateness of UMGC’s faculty model relative to its educational mandate and mission were reaffirmed by MHEC in its 2016 review of mission statements, as evidenced in the following excerpt from the Commission’s report:

UMUC intentionally seeks highly qualified full-time and adjunct faculty who have hands-on experience in the disciplines they teach and who can leverage that experience to provide a richer learning experience for students. The university's mission to serve adult students is supported by adjunct faculty who are scholar-practitioners engaged daily in their profession. The ability to employ adjunct faculty is critical to UMUC's capacity to quickly deploy academic and continuing education programs in response to workforce-related needs. This entrepreneurship and flexibility in establishing new programs is particularly important to the university: given its history of very limited state support, the university's financial model is based on tuition revenues, and all programs must be self-supporting.¹⁶

Consistent with this model, UMGC has a substantial roster of faculty with expertise in areas related to Applied Technology. Teaching effectiveness is monitored by class observation, student course evaluations, and program-specific, student-level competency assessment. The School of Cybersecurity and Information Technology already has an active unit of faculty qualified and prepared to teach courses in the proposed program and we constantly recruit additional faculty.

The following is a partial list of existing faculty (full-time and adjunct) who will provide academic oversight and leadership for the proposed program and includes their academic title/rank, and the courses they will teach:

Table 5: Core Roster of BSAT Faculty

Name	Appointment Type & Rank	Graduate Degree and Field	Status	Course(s) to be Taught
Nicholas Duchon	Professor	Ph.D, Mathematics	Full-time	Classes in Software Development & Security, and BSAT 495
James Robertson	Professor	DSc., Education	Full-time	BSAT 495
Duane Jarc	Professor	DSc., Computer Science	Full-time	CMSC 150, CMSC 350
Jesse Varsalone	Assoc. Professor	M.A., Education	Full-time	BSAT 495
Kate Goldberg	Asst. Professor	DBA, Business	Full-time	DATA 200, DATA 320, DATA 335
Michelle Hansen	Assoc. Professor	Ph.D, Computer Science	Full-time	IFSM 201, IFSM 301, IFSM 310
Susan Madorran	Assoc. Professor	M.S. Computer Science	Full-time	IFSM 300, IFSM 304, IFSM 370
Tamie Santiago	Professor	DBA, Business	Full-time	IFSM 311, IFSM 380
Michelle Pittman	Asst. Professor	M.S., Applied Technology	Full-time	CMST 308, CMST 320, CMST 325
Mario Camilien	Assoc. Professor	M.G., Information Systems	Adjunct	Classes in Cybersecurity Management & Policy
Kenice Middleton	Assoc. Professor	M.S. Information Assurance	Adjunct	Classes in Cybersecurity Management & Policy, BSAT 495

¹⁶ Source: Maryland Higher Education Commission (December 2015), Mission Statement Review: http://mhec.maryland.gov/institutions_training/Documents/acadaff/2016MissionStatementReview.pdf

Dorothy McClintock	Professor	Ph.D Information & Decision Support Systems	Adjunct	Classes in Cybersecurity Management & Policy, BSAT 495
Cal Lassetter	Professor	Ph.D, Urban Services	Adjunct	Classes in Cybersecurity Management & Policy
Lucas Donoho	Assoc. Professor	M.S. Computer Science	Adjunct	Classes in Software Development & Security
Reginald Haseltine	Assoc. Professor	M.S., Computer & Information Science	Adjunct	Classes in Software Development & Security
Stephen Nieberding	Assoc. Professor	M.S. Technology Management	Adjunct	Classes in Cybersecurity Technology
Jody Wilkins	Asst. Professor	M.S., Cybersecurity	Adjunct	Classes in Cybersecurity Technology
Bryce Martens	Asst. Professor	M.A. Information Technology Management	Adjunct	Classes in Cybersecurity Technology
Michael Dean	Assoc. Professor	M.S., Mathematics	Adjunct	DATA 200, DATA 320, DATA 335
Solomon Britto	Asst. Professor	DBA, Business	Adjunct	BSAT 495
Jack Sanocki	Professor	Ph.D, Information Systems	Adjunct	BSAT 495
Ian Carnahan	Assoc. Professor	DSc., Sciences & Systems	Adjunct	CMST 315, CMST 386, CMST 388
Annette Gonzales	Assoc. Professor	M.A., Publication Design	Adjunct	CMST 295, CMST 301, CMST 310
John Bono	Professor	Ph.D, Information Systems	Adjunct	BSAT 495
Soumajit Ghosh	Assoc. Professor	M.S., Industrial Engineering	Adjunct	CMIS 102, CMIS 242
Cynthia Marcello	Professor	M.S., Psychology	Adjunct	CMIS 141, CMSC 325
Janak Rajani	Asst. Professor	M.S., Computer Science	Adjunct	BSAT 495

This list does not include all of the hundreds of existing UMGC adjunct faculty who are already teaching computing and other courses from which the program will draw. Any new faculty needed will be hired by the existing program directors. Any additional adjunct faculty needed to teach the new capstone course (BSAT 495) will be hired and supervised by Dr. Chandra Bajracharya.

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

UMGC is committed to providing pedagogy training in support of student learning throughout the faculty life cycle with the institution. FACDEV 411, our required New Faculty Academic Orientation, is a two-week, facilitated online training that covers the history of UMG, pedagogy of adult learning, facilitating online learning, and providing additional support for students through UMG's Library, Effective Writing Center, and Office of Accessibility Services. Parallel required training courses exist for faculty teaching hybrid courses. Faculty are also required to complete the FACDEV 112 course focused on Coaching Strategies for Learning and Academic Success.

In addition, faculty members have access to just-in-time professional development opportunities through the university's Faculty Development unit, which provides offerings as our bi-monthly webinars; self-paced workshops on pedagogical and LMS-related matters; quick guides on online classroom support and technology; and a variety of training modules in specific areas.

b) The learning management system

UMGC provides multiple touchpoints to ensure thorough orientation to and continued education about our Learning Management System (LMS), Brightspace. Building on the materials provided in FACDEV 411, UMG offers workshops on grading strategies; the integration of audio and video feedback to students; gradebook setup and rubrics; crafting powerful introductions; open educational resources (OERs) used in the classroom; and netiquette. Each online course includes a faculty-only space within the LMS where program leaders put guidance, instructions, and other support resources for faculty in delivery their section of their course.

In addition, many webinars directly amplify the skills needed by faculty members to be successful in the online classroom, e.g., coaching, feedback; scaffolding student learning; digital literacy; classroom assessment techniques; creating a more engaging classroom; etc.

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

Besides the strategies outlined above, UMG has recognized the need to equip faculty more comprehensively with skills and abilities to enhance engagement and coaching, in order to improve student learning and retention.

To that end, UMG has recently developed a coaching training that will be made available to all UMG faculty. By Fall 2023, all faculty are projected to have completed FACDEV 112 Coaching Strategies for Learning and Academic Success. This training teaches faculty how to effectively use coaching skills to create an active and motivating presence in the online classroom in order to establish helpful and supportive relationships with each student leading to persistence and academic success.

This addition to our training catalog will diminish any perceived distance between faculty and students taking online courses by providing specific strategies and tactics to facilitate regular interaction and outreach and personalized and actionable coaching and feedback.

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.

No new library resources are needed to serve the B.S. in Applied Technology. The UMGC Library provides access to a vast array of library resources and services to UMGC students, faculty, and staff worldwide to meet their academic needs and includes a wide and varied collection of journal articles, reports, case studies, and, in some instances, complete books available electronically via a comprehensive selection of online library databases. Library services include instruction, reference, electronic reserves, and document delivery for materials not otherwise available in the library databases. The UMGC Library relies on distributed technology as its primary mechanism to provide online access to resources and services to UMGC's widely dispersed, working-adult student population.

The curated collection of online academic research databases available to UMGC faculty and students provides access to hundreds of thousands of full-text articles as well as reports, statistics, case studies, book chapters, and complete books in a wide range of subject areas. In addition, students have access to the full text of dissertations and theses via the *ProQuest Dissertations and Theses* database. The Library assists faculty and learning designers in providing links to Library materials directly in online classes.

The UMGC Library also offers other resources and services. UMGC students, faculty, and staff within the continental United States have access to more than ten million volumes in print from the 16-member University System of Maryland and Affiliated Institutions (USMAI) library consortium. The UMGC Library offers document delivery services to all UMGC students, faculty, and staff worldwide for a variety of materials, including journal articles and book chapters. UMGC's expanding collection of 75,000 electronic books (e-books) has significantly increased the ability to meet the needs of UMGC's global population.

The UMGC Library provides faculty and students with research assistance in creating search strategies, selecting relevant databases, and evaluating and citing sources in a variety of formats via its *Ask a Librarian*, which includes 24/7 chat and email. A guide to locating scholarly articles and using UMGC's library databases. The UMGC Library *OneSearch* tool allows users to simultaneously search for scholarly articles, books, and/or other research resources via a single search engine in most of the databases to which the UMGC Library subscribes, either directly or as additional resources.¹⁷ In addition, UMGC faculty can request customized library instruction sessions for both on-site and online classes and can also add UMGC Library tutorials and materials to their learning management system classrooms and refer students to them through the Web gateway.

A librarian liaison assigned to each academic department assists faculty with resource identification and other program needs. The Subject Guides area of the library's web site provides a listing of resource guides for each subject area, with each guide containing relevant databases, Web sites, books, and other resources along with technical and citation assistance.

¹⁷ Source: UMGC Library, 2020: <http://sites.umgc.edu/library/index.cfm>

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 proposed B.S. in Applied Technology will primarily be offered online using the distance education platform described above. Existing resources related to facilities, infrastructure, and equipment are adequate to meet the needs of the program.

- 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**

UMGC has an internal email network that provides all incoming students and all faculty with consistent email domains @student.umgc.edu and @faculty.umgc.edu respectively. Students are encouraged but not limited to using this email address in all their communication with the university. Faculty are required to use their UMGC addresses for all their official UMGC communications.

UMGC's standard learning management system is Brightspace. All UMGC classes are taught using this system and all the students with appropriate technology and online access (referenced in section G8) have access to this system through their learning portal. Support is available for students and faculty through a 24/7 help desk and a large variety of online help resources on UMGC's [website](#).

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

- 1. Complete [Table 6: 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.**

No new general funds are required for the implementation of this program. The financial table that follows is based only on students entering the new program. As shown in Tables 6 and 7 below, the program is expected to be self-supporting from inception. UMGC's existing base of adjunct and full-time faculty and administrative and support staff will support and serve the B.S. Applied Technology.

For the resource category 2.e, note that only instate tuition (\$312/credit) is considered.

Table 6: Resource Projections for Years 1-5

Resource Categories	Year1	Year2	Year 3	Year4	Year 5
1. Reallocated Funds	0	0	0	0	0
2. Tuition/Fee Revenue (c + g below)	\$234,000	\$936,000	\$1,872,000	2,808,000	\$3,744,000
a. Number of F/T Students	0	0	0	0	0
b. Annual Tuition/Fee Rate	N/A	N/A	N/A	N/A	N/A
c. Total F/T Revenue (a x b)	N/A	N/A	N/A	N/A	N/A
d. Number of P/T Students	25	100	200	300	400
e. Credit Hour Rate	\$312	\$312	\$312	\$312	\$312
f. Annual Credit Hour Rate	30	30	30	30	30
g. Total P/T Revenue (d x e x f)	234,000	936,000	1,872,000	2,808,000	3,744,000
3. Grants, Contracts & Other External Sources	0	0	0	0	0
4. Other Sources	0	0	0	0	0
TOTAL (Add 1 - 4)	\$234,000	\$936,000	\$1,872,000	\$2,808,000	\$3,744,000

2. Complete [Table 7: 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.

Because the primary computing area is derived from existing programs within the School of Cybersecurity & IT, and because the secondary areas of focus draw from existing programs within and beyond the School, no new full-time employees are required to support the program. The capstone course (BSAT 495) will be supervised by the Program Director for Computer Science. Because all but one of the courses are extant (BSAT 495), the only faculty-related expenditure will be in the teaching stipend for faculty who teach the capstone course.

In category 1.b, the adjunct faculty salary is the median salary for an adjunct associate faculty member with a terminal degree at longevity step 11. In category 7, the expenditure listed is for course development.

Table 7: Program Expenditures

Expenditure Categories	Year 1	Year 2	Year 3	Year 4	Year 5
1. Faculty (b + c below)	\$4483.17	\$22,415.85	\$31,382.19	\$40,348.53	\$49,314.87
a. Number of FTE sections	1	5	7	9	11
b. Total Salary (Adjunct salary at \$1371 per credit hour)	\$4113	\$20,565	\$28,791	\$37,017	\$45,243
c. Total Benefits (9%)	\$370.17	\$1850.85	\$2591.19	\$3331.53	\$4071.87
2. Admin.Staff (b + c below)	\$0	\$0	\$0	\$0	\$00
a. Number of FTE	0	0	0	0	0
b. Total Salary	0	0	0	0	0
c. Total Benefits (37%)	\$0	\$0	\$0	\$0	\$0
3. Support Staff (b+c below)	\$0	\$0	\$0	\$0	\$0
a. Number of FTE	0	0	0	0	0
b. Total Salary	\$0	\$0	\$0	\$0	\$0
c. Total Benefits (37%)	\$0	\$0	\$0	\$0	\$0
4. Technical Support and 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 (course development)	4000	0	0	0	0
TOTAL (Add 1 – 7)	\$8483.17	\$22,415.85	\$31,382.19	\$40,348.53	\$49,314.87

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.

UMGC has created an annual program review process that includes assessment of student learning as described earlier along with indirect measures of student learning including student course evaluations, student retention and graduation rates, and student program surveys administered in capstone courses. As part of this process, external data is collected, including enrollment in related programs at other institutions and trends in labor markets. UMGC’s mission for career relevant education requires that program learning goals and curriculum are maintained in the context of changing needs in labor markets and required skills for graduates.

As part of the annual program review, courses within the program portfolio are reviewed for course health. This includes student-success rates within courses and course reenrollment rates (how many students in a course re-enroll in the following term). In addition, student course evaluations are administered every term for every course. Data are aggregated in academic dashboards at the course level to allow academic program leaders to evaluate the effectiveness of course curriculum and instructional delivery. When a course is scheduled for revision, faculty teaching the course are surveyed to provide input to the faculty and instructional designers revising the course.

UMGC has adopted Quality Matters (QM) as the standard for curriculum design. As that process rolls out, courses will be reviewed on a regular basis against the Quality Matters rubric to ensure quality of course materials and design.

Full-time faculty are reviewed annually. Part-time faculty are reviewed on a course/semester basis. The student course evaluation provides an opportunity for faculty to receive both quantitative and qualitative feedback on their teaching.

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.

Faculty, administrators, the Office of Academic Quality and Services, and the Integrative Learning and Design unit collaborate to implement and monitor assessment activities, review results, and make appropriate resources, curriculum, or other modifications. Annually, student performance across learning demonstrations is evaluated to determine where improvements may be required. Changes are made to curriculum and/or student support models. The process supports a continuous cycle of improvement.

Additional evaluation includes tracking of student retention, grade distributions and cost-effectiveness. Regular academic program reviews consider all factors related to academic quality, curriculum currency and relevance, student support and adequacy of facilities.

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.

UMGC seeks to reflect the diversity of the global community it serves. Cultural differences are recognized, valued, and considered essential to the educational process. UMGc provides an academic environment in which diversity is not only articulated as one of the institutional core values, but it is reflected in the university's ethnically and racially diverse student body and its proven record of providing higher education access to historically excluded populations. In addition to the University's commitment to DEI values, the School of Cybersecurity and Information Technology has integrated specific goals and priority action plans for enhancing DEI in the curriculum and among the faculty as part of the School's annual Strategic Plan.

The University's Integrative Learning Design unit collaborates with the School and UMGc's Office of Diversity and Equity to ensure a robustly inclusive curriculum that is built around UMGc's focus on project-, scenario-, and problem-based learning, which learning science has shown to more adequately respond to the learning approaches most effective for adult students. This planning is part of a broader UMGc strategic focus DEI, which is coordinated through the recently released DEI Strategic Plan for UMGc.

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.

N/A

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.**

UMGC has been approved to offer distance education by the Middle States Commission on Higher Education (MSCHE) and maintains compliance with COMAR 13B.02.03.22. UMGC 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. Furthermore, among its many recognitions, as of 2016 UMGC had received five Sloan Consortium (now Online Learning Consortium) Excellence Awards for online program quality and three IMS Global Learning Consortium awards for technology integration in the classroom environment.

Historically, UMGC was an early provider of off-campus educational opportunities for students and one of the first universities in Maryland to develop online education. UMGC has been a leader among public institutions in providing quality and affordable online education and has been providing distance education to residents of the state of Maryland, to the nation's service members, and to those who live outside of Maryland for more than seventy years. Additionally, UMGC's Europe and Asia divisions offer hybrid and onsite classes to fulfill contract requirements and meet the needs of military students overseas. Stateside, all onsite classes, except for an occasional accelerated offering, are in hybrid format, blending onsite and online delivery.

UMGC's distance education offerings are in compliance with C-RAC's 2011 Guidelines.

Appendix A



90-2-1.001
cc: LEL
Bob J.

Robert L. Ehrlich, Jr.
Governor
Michael S. Steele
Lt. Governor
John J. Oliver, Jr.
Chairman
Calvin W. Burnett
Secretary of Higher Education

MEMORANDUM

DATE: January 6, 2005
TO: Dr. Nicholas H. Allen
Provost and Chief Academic Officer, UMUC
FROM: Michael J. Kiphart, Ph.D. *MJK*
Assistant Secretary for Planning and Academic Affairs
SUBJECT: UMUC Waiver of Full-Time Faculty and Library/Learning Resources Center

Office of the Provost
UMUC
JAN 10 2005

According to our records, UMUC's request for a waiver of full-time faculty and library/learning resource center went before the Education Policy Committee on January 16, 1996. The Education Policy Committee approved for the University a waiver of the definition of full-time faculty and library/learning resource center as provided for in the Commission's *Minimum Requirements for Degree-Granting Institutions*, and further, that the Commission instruct the Secretary of Higher Education to review the University at regular intervals to assure that the University was in compliance with the applicable provisions of the waiver to the minimum requirements.

On February 15, 1996, the matter went before the Commission and an amended recommendation was approved. The Commission approved for the University a waiver of the requirements for total credit hours taught by full-time faculty and for a waiver of the requirements for a minimum library collection for the Library/Learning Resource Center as provided for in the Commission's *Minimum Requirements for Degree-Granting Institutions*. Further, the Commission instructed the Secretary of Higher Education to review the University at regular intervals to assure that the University was in compliance with the applicable provisions of the waiver to the minimum requirements. The Commission also approved a recommendation that the Faculty Advisory Council and Student Advisory Council recommendations be referred to the University of Maryland System Board of Regents.

Enclosed are documents supporting the approval of the waiver. Should you require additional assistance, please contact David Sumler, Director of Academic Affairs – Planning and Policy, at 410-260-4533 or dsumler@mhec.state.md.us.

MJK:aaw
Enclosures



cc: as filed

Forwarded memo
for appropriate
action
via
Comm. on ED
Policy

Mr. Lance W. Billingsley, Esq.
Chairman, Board of Regents
University of Maryland System
3300 Metzger Road
Adelphi, MD 20783

April 23, 1996

RECEIVED
APR 30 1996
By VCAA

Farris H. Glendening
Governor

Edward O. Clarke, Jr.
Chairman

Patricia S. Florestano
Secretary of
Higher Education

RECEIVED

APR 29 1996

OFFICE OF THE CHANCELLOR
THE UNIVERSITY OF MARYLAND
SYSTEM

Dear Mr. Billingsley:

At its February 15, 1996 meeting, the Maryland Higher Education Commission considered a request by University of Maryland University College for a waiver of the Commission's minimum requirements in the area of full-time faculty and library resources. The Commission has granted the waiver.

In the discussion of the waiver and related issues, both the Faculty Advisory Council and the Student Advisory Council to the Commission raised issues which the Commission felt were more appropriately addressed by the University of Maryland's governing board. Therefore, I am forwarding to you the resolutions submitted to the Commission by these two advisory councils, in addition to the relevant materials considered by the Commission in granting the waivers.

Consistent with the final recommendations of the Commission on this matter, I would appreciate a review of these issues by the Board of Regents. I would also appreciate receiving the results of that review when it is completed. Since the academic year is coming to a close, I realize that any reaction on the part of the Board of Regents may be delayed until next fall. In light of that schedule, could you please supply the Commission with the Board of Regents' position by November 1, 1996.

Sincerely,
Edward O. Clarke, Jr.
Edward O. Clarke, Jr.
Chairman

EOC:PSF:JAS:ds

Enclosures

cc: Dr. Patricia S. Florestano
Dr. Donald N. Langenberg

16 Francis St., Annapolis, MD 21401-1781 | (410) 974-2971 | FAX (410) 974-3513
TTY for the Deaf: (800) 735-2258

Appendix B: UMGC B.S. Applied Technology Program Recommended Gen Ed and Elective Courses

This appendix lists suggested courses which fulfill general education requirements, and suggested electives. UMGC students can always use other courses from the catalog, which meet MHEC general education requirements. For full course descriptions and an overview of all requirements, please refer to the current UMGC catalog.

Degree requirements may change based on the date of initial enrollment at UMGC.

Recommended GenEd courses	Requirements
LIBS 150 Introduction to Research (1)	General education/computing and research
PACE 111T Program and Career Exploration in Technology (3)	General education/computing and research
CMIS 102 Introduction to Problem Solving and Algorithm Design (3)	General education/computing and research
IFSM 201 Concepts and Applications of Information Technology (3)	General education/computing and research
SPCH 100 Foundations of Oral Communication (3)	General education/communications
WRWG 111 Academic Writing I (3)	General education/communications
WRWG 112 Academic Writing II (3)	General education/communications
STAT 200 Introduction to Statistics (3)	General education/mathematics
MATH 115 Pre-Calculus (3) or MATH 105 Topics for Mathematical Literacy (3)	General education/mathematics
BIOL 103 Introduction to Biology (4) or NSCI 103 Fundamentals of Physical Science (4)	General education/biological and physical sciences
BEHS 103 Technology in Contemporary Society (3)	General education/behavioral and social sciences
ECON 103 Economics in the Information Age (3)	General education/behavioral and social sciences
HIST 125 Technological Transformations (3)	General education/arts and humanities
HUMN 344 Technology and Culture (3)	General education/arts and humanities

Appendix C: Mapping of Program Learning Goals for the B.S. program to core courses in the major

PLG	Courses	
	BSAT 495	
Apply critical thinking and quantitative reasoning skills while using computing technologies and methodologies	X	
Combine concepts and practices in modern Information Technology (IT) and Information Systems (IS) along with fundamental concepts in other fields to develop computing-based multi-dimensional approaches to problem-solving	X	
Develop oral and written communication skills, to present computing-based solutions to complex problems	X	
Analyze insights about personal and professional goals	X	

Appendix D: MHEC inventory of program titles which contain “Technology,” “Studies,” and/or “Applied”

Institution	Program	Degree
Allegany College of Maryland	APPLIED TECHNICAL STUDIES	Associate Degree
Bowie State University	APPLIED AND COMPUTATIONAL MATHEMATICS	Post-Baccalaureate Certificate
Bowie State University	APPLIED AND COMPUTATIONAL MATHEMATICS	Master's Degree
Coppin State University	APPLIED MOLECULAR BIOLOGY AND BIOCHEMIST	Master's Degree
Coppin State University	APPLIED MOLECULAR BIOLOGY AND BIOCHEMIST	Post-Baccalaureate Certificate
Coppin State University	APPLIED PSYCHOLOGY	Bachelor's Degree
Frostburg State University	APPLIED COMPUTER SCIENCE	Master's Degree
Frostburg State University	APPLIED ECOLOGY AND CONSERVATION BIOLOG	Master's Degree
Harford Community College	APPLIED DISABILITY STUDIES	Associate Degree
Hood College	APPLIED COMPUTING	Bachelor's Degree
Johns Hopkins University	APPLIED & COMPUTATIONAL MATHEMATICS	Doctorate (Research & Scholarship)
Johns Hopkins University	APPLIED & COMPUTATIONAL MATHEMATICS	Master's Degree
Johns Hopkins University	APPLIED & COMPUTATIONAL MATHEMATICS	Bachelor's Degree
Johns Hopkins University	APPLIED AND COMPUTATIONAL MATHEMATICS	Post-Master's Certificate
Johns Hopkins University	APPLIED BEHAVIOR ANALYSIS	Post-Master's Certificate
Johns Hopkins University	APPLIED BIOMEDICAL ENGINEERING	Post-Master's Certificate
Johns Hopkins University	APPLIED BIOMEDICAL ENGINEERING	Post-Baccalaureate Certificate
Johns Hopkins University	APPLIED BIOMEDICAL ENGINEERING	Master's Degree
Johns Hopkins University	APPLIED ECONOMICS	Master's Degree
Johns Hopkins University	APPLIED HEALTH SCIENCES INFORMATICS	Master's Degree
Johns Hopkins University	APPLIED MATHEMATICS & STATISTICS	Bachelor's Degree
Johns Hopkins University	APPLIED MATHEMATICS & STATISTICS	Master's Degree
Johns Hopkins University	APPLIED MATHEMATICS & STATISTICS	Doctorate (Research & Scholarship)
Johns Hopkins University	APPLIED PHYSICS	Master's Degree
Johns Hopkins University	APPLIED PHYSICS	Post-Master's Certificate
Johns Hopkins University	APPLIED PSYCHOLOGY	Master's Degree
Johns Hopkins University	APPLIED RESEARCH FOR COMMUNICATION	Post-Baccalaureate Certificate
Johns Hopkins University	QUANTITATIVE METHODS IN APPLIED ECON	Post-Master's Certificate
McDaniel College	APPLIED MATHEMATICS	Bachelor's Degree
Montgomery College-All Campuses	APPLIED GEOGRAPHY	Associate Degree
Morgan State University	APPLIED LIBERAL STUDIES	Bachelor's Degree
Mount St. Mary's University	APPLIED BEHAVIOR ANALYSIS	Master's Degree
Mount St. Mary's University	APPLIED BEHAVIOR ANALYSIS	Post-Master's Certificate
Salisbury University	APPLIED BIOLOGY	Master's Degree

SANS Technology Institute	APPLIED CYBERSECURITY	Upper Division Certificate
SANS Technology Institute	APPLIED CYBERSECURITY	Bachelor's Degree
SANS Technology Institute	APPLIED CYBERSECURITY	Bachelor's Degree
Stevenson University	APPLIED MATHEMATICS	Bachelor's Degree
Towson University	APPLIED AND INDUSTRIAL MATHEMATICS	Master's Degree
Towson University	APPLIED INFORMATION TECHNOLOGY	Master's Degree
Towson University	APPLIED MUSIC	Post-Baccalaureate Certificate
Towson University	APPLIED PHYSICS	Master's Degree
Univ. of Maryland Eastern Shore	APPLIED COMPUTER SCIENCE	Master's Degree
Univ. of Maryland Eastern Shore	APPLIED DESIGN	Bachelor's Degree
Univ. of Maryland University College	APPLIED SOCIAL SCIENCES	Upper Division Certificate
Univ. of Maryland, College Park	APPLIED AGRICULTURE	Lower Division Certificate
Univ. of Maryland, College Park	APPLIED ECONOMICS	Master's Degree
Univ. of Maryland, College Park	APPLIED POLITICAL ANALYTICS	Master's Degree
Univ. of Maryland, College Park	APPLIED SOCIAL SCIENCES	Upper Division Certificate
University of Baltimore	APPLIED INFORMATION TECHNOLOGY	Bachelor's Degree
University of Baltimore	APPLIED PSYCHOLOGY	Master's Degree
University of Maryland, Baltimore City	AGING AND APPLIED THANATOLOGY	Post-Baccalaureate Certificate
University of Maryland, Baltimore City	APPLIED AND PROFESSIONAL ETHICS	Master's Degree
University of Maryland, Baltimore County	APPLIED AND PROFESSIONAL ETHICS	Post-Baccalaureate Certificate
University of Maryland, Baltimore County	APPLIED AND PROFESSIONAL ETHICS	Master's Degree
University of Maryland, Baltimore County	APPLIED DEVELOPMENTAL PSYCHOLOGY	Master's Degree
University of Maryland, Baltimore County	APPLIED DEVELOPMENTAL PSYCHOLOGY	Doctorate (Research & Scholarship)
University of Maryland, Baltimore County	APPLIED MATHEMATICS	Doctorate (Research & Scholarship)
University of Maryland, Baltimore County	APPLIED MATHEMATICS	Master's Degree
University of Maryland, Baltimore County	APPLIED MOLECULAR BIOLOGY	Master's Degree
University of Maryland, Baltimore County	APPLIED SOCIAL RESEARCH METHODS	Post-Baccalaureate Certificate
University of Maryland, Baltimore County	APPLIED SOCIOLOGY	Master's Degree
Allegany College of Maryland	COMPUTER TECHNOLOGY	Associate Degree

Allegany College of Maryland	MEDICAL LAB TECHNOLOGY-BIOTECHNOLOGY	Lower Division Certificate
Allegany College of Maryland	MULTIMEDIA TECHNOLOGY	Associate Degree
Allegany College of Maryland	TREE CARE TECHNOLOGY	Lower Division Certificate
Anne Arundel Community College	CYBER TECHNOLOGY	Lower Division Certificate
Anne Arundel Community College	ELECTRONICS TECHNOLOGY	Lower Division Certificate
Anne Arundel Community College	GENERAL TECHNOLOGY	Lower Division Certificate
Anne Arundel Community College	MECHATRONICS TECHNOLOGY	Associate Degree
Anne Arundel Community College	MECHATRONICS TECHNOLOGY	Lower Division Certificate
Anne Arundel Community College	RADIOLOGIC TECHNOLOGY	Associate Degree
Anne Arundel Community College	SURGICAL TECHNOLOGY	Associate Degree
Baltimore City Community College	BIOTECHNOLOGY	Associate Degree
Baltimore City Community College	BIOTECHNOLOGY LAB SCIENCE	Lower Division Certificate
Baltimore City Community College	HEALTH INFORMATION TECHNOLOGY	Associate Degree
Baltimore City Community College	INFORMATION TECHNOLOGY BASIC SKILLS	Lower Division Certificate
Baltimore City Community College	ROBOTICS/MECHATRONICS TECHNOLOGY	Associate Degree
Bowie State University	COMPUTER TECHNOLOGY	Bachelor's Degree
Bowie State University	TECHNOLOGY	Bachelor's Degree
Capitol Technology University	COMPUTER ENGINEERING TECHNOLOGY	Bachelor's Degree
Capitol Technology University	ELECTRONICS ENGINEERING TECHNOLOGY	Bachelor's Degree
Capitol Technology University	ELECTRONICS ENGINEERING TECHNOLOGY	Bachelor's Degree
Capitol Technology University	ENGINEERING TECHNOLOGY	Master's Degree
Capitol Technology University	ENGINEERING TECHNOLOGY	Bachelor's Degree
Capitol Technology University	INFORMATION TECHNOLOGY	Post-Baccalaureate Certificate
Capitol Technology University	INFORMATION TECHNOLOGY	Bachelor's Degree
Capitol Technology University	MANAGEMENT OF CYBER & INFO TECHNOLOGY	Bachelor's Degree
Capitol Technology University	SECURE MOBILE TECHNOLOGY	Post-Baccalaureate Certificate
Capitol Technology University	TECHNOLOGY	Doctorate (Research & Scholarship)
Capitol Technology University	TECHNOLOGY & BUSINESS MNGT	Bachelor's Degree
Capitol Technology University	TECHNOLOGY WITH RESEARCH METHODS	Doctorate (Research & Scholarship)
Carroll Community College	ENTERTAINMENT TECHNOLOGY	Lower Division Certificate
Carroll Community College	ENTERTAINMENT TECHNOLOGY	Associate Degree
Carroll Community College	OFFICE TECHNOLOGY	Lower Division Certificate
Cecil College	AUDIO TECHNOLOGY	Lower Division Certificate
Cecil College	FIRE SCIENCE TECHNOLOGY	Associate Degree
Chesapeake College	BUSINESS MANAGEMENT TECHNOLOGY CERTIF.	Lower Division Certificate
Chesapeake College	COMPUTER SCIENCE TECHNOLOGY	Associate Degree
Chesapeake College	EDUCATIONAL TECHNOLOGY	Lower Division Certificate
Chesapeake College	ENGINEERING TECHNOLOGY	Associate Degree
Chesapeake College	SURGICAL TECHNOLOGY	Associate Degree

College of Southern Maryland	CLOUD AND INFORMATION TECHNOLOGY	Associate Degree
College of Southern Maryland	CLOUD AND INFORMATION TECHNOLOGY CERTIFI	Lower Division Certificate
College of Southern Maryland	ENVIRONMENTAL TECHNOLOGY	Associate Degree
College of Southern Maryland	ENVIRONMENTAL TECHNOLOGY	Lower Division Certificate
College of Southern Maryland	FIRE SCIENCE TECHNOLOGY	Associate Degree
College of Southern Maryland	MANUFACTURING TECHNOLOGY	Lower Division Certificate
College of Southern Maryland	MARITIME OPERATIONS TECHNOLOGY	Associate Degree
College of Southern Maryland	NETWORK TECHNOLOGY	Lower Division Certificate
College of Southern Maryland	TECHNOLOGY MANAGEMENT	Lower Division Certificate
Community College of Balt County	ADVANCED HVAC & ENERGY TECHNOLOGY	Lower Division Certificate
Community College of Balt County	ANESTHESIA TECHNOLOGY	Associate Degree
Community College of Balt County	AUTO TECHNOLOGY	Lower Division Certificate
Community College of Balt County	AUTOMOTIVE TECHNOLOGY	Associate Degree
Community College of Balt County	BASIC HVAC & ENERGY TECHNOLOGY	Lower Division Certificate
Community College of Balt County	BASIC NETWORK TECHNOLOGY	Lower Division Certificate
Community College of Balt County	BIOTECHNOLOGY LABORATORY TECHNICIAN	Lower Division Certificate
Community College of Balt County	CIS GENERAL INFORMATION TECHNOLOGY	Lower Division Certificate
Community College of Balt County	COMPUTER SERVICE TECHNOLOGY	Lower Division Certificate
Community College of Balt County	DIRECTED TECHNOLOGY - (CORRECTIONS PROF)	Lower Division Certificate
Community College of Balt County	DIRECTED TECHNOLOGY (PUBLIC ASST SPEC)	Lower Division Certificate
Community College of Balt County	DIRECTED TECHNOLOGY (TELECOMM ELECTRON)	Lower Division Certificate
Community College of Balt County	ENGINEERING TECHNOLOGY	Associate Degree
Community College of Balt County	HISTOTECHNOLOGY	Associate Degree
Community College of Balt County	HVAC & ENERGY TECHNOLOGY	Associate Degree
Community College of Balt County	INFORMATION TECHNOLOGY	Associate Degree
Community College of Balt County	INFORMATION TECHNOLOGY SUPPORT CERTIE.	Lower Division Certificate
Community College of Balt County	INTERMEDIATE NETWORK TECHNOLOGY	Lower Division Certificate
Community College of Balt County	MEDICAL LABORATORY TECHNOLOGY	Associate Degree
Community College of Balt County	NETWORK TECHNOLOGY	Lower Division Certificate
Community College of Balt County	NETWORK TECHNOLOGY	Associate Degree
Community College of Balt County	SURGICAL TECHNOLOGY	Associate Degree
Coppin State University	ASSISTIVE TECHNOLOGY	Post-Baccalaureate Certificate
Frederick Community College	BIOTECHNOLOGY	Lower Division Certificate
Frederick Community College	BIOTECHNOLOGY	Associate Degree
Frederick Community College	BUILDING TRADES TECHNOLOGY	Lower Division Certificate
Frederick Community College	HEALTHCARE INFORMATION TECHNOLOGY	Lower Division Certificate
Frederick Community College	INFORMATION TECHNOLOGY	Associate Degree
Frederick Community College	STEM TECHNOLOGY	Associate Degree
Frederick Community College	SURGICAL TECHNOLOGY	Associate Degree

Frostburg State University	INFORMATION TECHNOLOGY	Bachelor's Degree
Garrett College	BUSINESS INFORMATION TECHNOLOGY	Associate Degree
Goucher College	ART AND TECHNOLOGY	Master's Degree
Hagerstown Community College	ALTERNATIVE ENERGY TECHNOLOGY	Associate Degree
Hagerstown Community College	BIOTECHNOLOGY	Lower Division Certificate
Hagerstown Community College	BIOTECHNOLOGY	Associate Degree
Hagerstown Community College	ELECTRICAL ENGINEERING TECHNOLOGY	Associate Degree
Hagerstown Community College	GRAPHIC DESIGN TECHNOLOGY	Associate Degree
Hagerstown Community College	GRAPHIC DESIGN TECHNOLOGY	Lower Division Certificate
Hagerstown Community College	INDUSTRIAL TECHNOLOGY	Lower Division Certificate
Hagerstown Community College	INFORMATION SYSTEMS TECHNOLOGY	Lower Division Certificate
Hagerstown Community College	INFORMATION SYSTEMS TECHNOLOGY	Associate Degree
Hagerstown Community College	NETWORKING TECHNOLOGY	Lower Division Certificate
Hagerstown Community College	WEB & MULTIMEDIA TECHNOLOGY	Associate Degree
Harford Community College	BIOTECHNOLOGY	Associate Degree
Harford Community College	BIOTECHNOLOGY	Lower Division Certificate
Harford Community College	ENGINEERING TECHNOLOGY	Associate Degree
Harford Community College	GEOSPATIAL TECHNOLOGY	Associate Degree
Harford Community College	GEOSPATIAL TECHNOLOGY	Lower Division Certificate
Harford Community College	HEALTH INFORMATION TECHNOLOGY	Lower Division Certificate
Hood College	INFORMATION TECHNOLOGY	Master's Degree
Hood College	MANAGEMENT OF INFORMATION TECHNOLOGY	Master's Degree
Howard Community College	BIOMEDICAL EQUIPMENT TECHNOLOGY	Associate Degree
Howard Community College	COMPUTER SUPPORT TECHNOLOGY	Associate Degree
Howard Community College	CYBER FORENSICS TECHNOLOGY	Lower Division Certificate
Howard Community College	ENTERTAINMENT TECHNOLOGY	Lower Division Certificate
Howard Community College	ENTERTAINMENT TECHNOLOGY	Associate Degree
Howard Community College	HELPDESK/LAN SUPPORT TECHNOLOGY	Lower Division Certificate
Howard Community College	INFORMATION TECHNOLOGY	Associate Degree
Howard Community College	OFFICE TECHNOLOGY	Lower Division Certificate
Howard Community College	PHOTONICS TECHNOLOGY	Associate Degree
Howard Community College	RADIOLOGIC TECHNOLOGY	Associate Degree
Johns Hopkins University	BIOTECHNOLOGY	Master's Degree
Johns Hopkins University	BIOTECHNOLOGY EDUCATION	Post-Baccalaureate Certificate
Johns Hopkins University	BIOTECHNOLOGY ENTERPRISE	Post-Baccalaureate Certificate
Johns Hopkins University	LEADERSHIP IN TECHNOLOGY INTEGRATION	Post-Baccalaureate Certificate
Johns Hopkins University	NANOBIOTECHNOLOGY	Certificate of Advanced Study
Johns Hopkins University	SPACE TECHNOLOGY	Master's Degree
Lincoln College of Technology	A/C, REFRIGERATION & HEATING TECHNOLOGY	Lower Division Certificate
Lincoln College of Technology	AUTOMOTIVE TECHNOLOGY	Lower Division Certificate

Lincoln College of Technology	AUTOMOTIVE TECHNOLOGY MANAGEMENT (BTPS)	Bachelor's Degree
Lincoln College of Technology	TECHNOLOGY & SKILLED TRADES	Associate Degree
Loyola University Maryland	EDUCATIONAL TECHNOLOGY	Master's Degree
Loyola University Maryland	MEDICAL TECHNOLOGY	Bachelor's Degree
Montgomery College-All Campuses	ARCHITECTURAL/CONSTRUCTION TECHNOLOGY	Associate Degree
Montgomery College-All Campuses	BIOTECHNOLOGY	Associate Degree
Montgomery College-All Campuses	BIOTECHNOLOGY CERTIFICATE	Lower Division Certificate
Montgomery College-All Campuses	BUILDING TRADES TECHNOLOGY	Lower Division Certificate
Montgomery College-All Campuses	DIGITAL MEDIA AND WEB TECHNOLOGY	Associate Degree
Montgomery College-All Campuses	FIRE PREVENTION TECHNOLOGY	Associate Degree
Montgomery College-All Campuses	FIRE PREVENTION TECHNOLOGY	Lower Division Certificate
Montgomery College-All Campuses	FIRE PROTECTION TECHNOLOGY	Lower Division Certificate
Montgomery College-All Campuses	FIRE PROTECTION TECHNOLOGY	Associate Degree
Montgomery College-All Campuses	INFORMATION TECHNOLOGY	Lower Division Certificate
Montgomery College-All Campuses	WIRELESS TECHNOLOGY	Lower Division Certificate
Morgan State University	INTERDISCIPLINARY TECHNOLOGY SERVICES	Bachelor's Degree
Mount St. Mary's University	BIOTECHNOLOGY & MANAGEMENT	Master's Degree
Mount St. Mary's University	INSTRUCTIONAL DESIGN AND TECHNOLOGY	Post-Baccalaureate Certificate
Prince George's Community College	ENTERTAINMENT TECHNOLOGY	Lower Division Certificate
Prince George's Community College	INFORMATION TECHNOLOGY	Associate Degree
Prince George's Community College	SURGICAL TECHNOLOGY	Associate Degree
Prince George's Community College	WEB TECHNOLOGY	Lower Division Certificate
Salisbury University	TEACHING & LEARNING W/TECHNOLOGY	Post-Baccalaureate Certificate
Stevenson University	MIDDLE SCHOOL EDUC:LIB ARTS & TECHNOLOGY	Bachelor's Degree
Towson University	APPLIED INFORMATION TECHNOLOGY	Master's Degree
Towson University	EDUCATIONAL TECHNOLOGY	Post-Baccalaureate Certificate

Towson University	HEALTH INFORMATION TECHNOLOGY	Post-Baccalaureate Certificate
Towson University	INFORMATION TECHNOLOGY	Bachelor's Degree
Towson University	INFORMATION TECHNOLOGY	Doctorate (Research & Scholarship)
Towson University	INSTRUCTIONAL TECHNOLOGY	Master's Degree
Towson University	INSTRUCTIONAL TECHNOLOGY	Doctorate (Research & Scholarship)
Univ. of Maryland Eastern Shore	CAREER & TECHNOLOGY EDUCATION	Master's Degree
Univ. of Maryland Eastern Shore	CYBERSECURITY ENGINEERING TECHNOLOGY	Master's Degree
Univ. of Maryland Eastern Shore	ENGINEERING TECHNOLOGY	Bachelor's Degree
Univ. of Maryland Eastern Shore	TECHNOLOGY & ENGINEERING EDUCATION	Bachelor's Degree
Univ. of Maryland University College	BIOTECHNOLOGY	Master's Degree
Univ. of Maryland University College	BIOTECHNOLOGY (BS/BTPS)	Bachelor's Degree
Univ. of Maryland University College	CYBERSECURITY TECHNOLOGY	Bachelor's Degree
Univ. of Maryland University College	CYBERSECURITY TECHNOLOGY	Post-Baccalaureate Certificate
Univ. of Maryland University College	CYBERSECURITY TECHNOLOGY	Master's Degree
Univ. of Maryland University College	DATABASE SYSTEMS TECHNOLOGY	Post-Baccalaureate Certificate
Univ. of Maryland University College	FOUNDATIONS OF INFORMATION TECHNOLOGY	Post-Baccalaureate Certificate
Univ. of Maryland University College	INFORMATION TECHNOLOGY	Master's Degree
Univ. of Maryland University College	INSTRUCTIONAL TECHNOLOGY	Master's Degree
Univ. of Maryland University College	INSTRUCTIONAL TECHNOLOGY INTEGRATION	Post-Baccalaureate Certificate
Univ. of Maryland University College	LEARNING DESIGN & TECHNOLOGY	Post-Baccalaureate Certificate
Univ. of Maryland University College	LEARNING DESIGN AND TECHNOLOGY	Master's Degree
Univ. of Maryland University College	TECHNOLOGY IN DISTANCE EDUC & E-LEARNING	Post-Baccalaureate Certificate
Univ. of Maryland University College	TECHNOLOGY MANAGEMENT	Post-Baccalaureate Certificate
Univ. of Maryland, College Park	AGRICULTURAL SCIENCE & TECHNOLOGY	Bachelor's Degree
Univ. of Maryland, College Park	ENVIRONMENTAL SCIENCE & TECHNOLOGY	Master's Degree
Univ. of Maryland, College Park	ENVIRONMENTAL SCIENCE & TECHNOLOGY	Bachelor's Degree

Univ. of Maryland, College Park	ENVIRONMENTAL SCIENCE & TECHNOLOGY	Doctorate (Research & Scholarship)
Univ. of Maryland, College Park	INTEGRATED TECHNOLOGY IN EDUCATION	Post-Baccalaureate Certificate
Univ. of Maryland, College Park	LEARNING DESIGN AND TECHNOLOGY	Post-Baccalaureate Certificate
Univ. of Maryland, College Park	SCIENCE, TECHNOLOGY AND SOCIETY	Upper Division Certificate
Univ. of Maryland, College Park	SCIENCE, TECHNOLOGY, AND INNOVATION POLI	Post-Baccalaureate Certificate
Univ. of Maryland, College Park	TECHNOLOGY AND INFORMATION DESIGN	Bachelor's Degree
University of Baltimore	APPLIED INFORMATION TECHNOLOGY	Bachelor's Degree
University of Baltimore	INFO SYSTEMS & TECHNOLOGY MANAGEMENT	Bachelor's Degree
University of Baltimore	TECHNOLOGY COMMERCIALIZATION (UB/UMBC)	Post-Baccalaureate Certificate
University of Maryland, Baltimore City	MEDICAL AND RESEARCH TECHNOLOGY	Master's Degree
University of Maryland, Baltimore City	MEDICAL AND RESEARCH TECHNOLOGY	Bachelor's Degree
University of Maryland, Baltimore County	BUSINESS TECHNOLOGY ADMINISTRATION	Bachelor's Degree
University of Maryland, Baltimore County	HEALTH INFORMATION TECHNOLOGY	Upper Division Certificate
University of Maryland, Baltimore County	INSTRUCTIONAL TECHNOLOGY	Post-Baccalaureate Certificate
University of Maryland, Baltimore County	LEARNING AND PERFORMANCE TECHNOLOGY	Post-Baccalaureate Certificate
University of Maryland, Baltimore County	MUSIC TECHNOLOGY	Bachelor's Degree
University of Maryland, Baltimore County	TRANSLATIONAL LIFE SCIENCE TECHNOLOGY	Bachelor's Degree
Washington Adventist University	RADIOLOGIC TECHNOLOGY	Associate Degree
Wor-Wic Community College	COMPUTER TECHNOLOGY	Associate Degree
Wor-Wic Community College	CORRECTIONS TECHNOLOGY	Lower Division Certificate
Allegany College of Maryland	APPLIED TECHNICAL STUDIES	Associate Degree
Allegany College of Maryland	GENERAL STUDIES	Lower Division Certificate
Allegany College of Maryland	GENERAL STUDIES TRANSFER	Associate Degree
Allegany College of Maryland	LEGAL STUDIES	Associate Degree
Allegany College of Maryland	LEGAL STUDIES	Lower Division Certificate
Anne Arundel Community College	FORENSIC STUDIES	Associate Degree
Anne Arundel Community College	GENDER & SEXUALITY STUDIES	Lower Division Certificate
Anne Arundel Community College	PARALEGAL STUDIES	Associate Degree
Anne Arundel Community College	PARALEGAL STUDIES	Lower Division Certificate
Anne Arundel Community College	TRANSFER STUDIES	Lower Division Certificate
Anne Arundel Community College	TRANSFER STUDIES	Associate Degree
Baltimore City Community College	GENERAL STUDIES TRANSFER	Associate Degree

Bowie State University	CHILD & ADOLESCENT STUDIES	Bachelor's Degree
Carroll Community College	COMMUNICATIONS STUDIES AND JOURNALISM	Associate Degree
Carroll Community College	GENERAL STUDIES TRANSFER	Associate Degree
Cecil College	COMMUNICATION STUDIES	Associate Degree
Cecil College	EQUINE STUDIES	Associate Degree
Cecil College	EQUINE STUDIES	Lower Division Certificate
Cecil College	EQUINE STUDIES MANAGEMENT	Lower Division Certificate
Cecil College	GENERAL STUDIES	Associate Degree
Cecil College	PARALEGAL STUDIES	Associate Degree
Chesapeake College	GENERAL COLLEGE STUDIES	Associate Degree
Chesapeake College	GLOBAL AND INTERCULTURAL STUDIES	Lower Division Certificate
Chesapeake College	PARALEGAL STUDIES	Associate Degree
Chesapeake College	PARALEGAL STUDIES	Lower Division Certificate
Chesapeake College	TECHNICAL/PROFESSIONAL STUDIES	Associate Degree
Chesapeake College	THEATRE & PERFORMANCE STUDIES	Lower Division Certificate
Chesapeake College	TRANSFER STUDIES - ADVANCED	Lower Division Certificate
Chesapeake College	TRANSFER STUDIES - BASIC	Lower Division Certificate
College of Southern Maryland	ENVIRONMENTAL STUDIES	Associate Degree
College of Southern Maryland	GENERAL STUDIES	Lower Division Certificate
College of Southern Maryland	GENERAL STUDIES TRANSFER	Associate Degree
College of Southern Maryland	GENERAL STUDIES: MEDIA STUDIES	Associate Degree
College of Southern Maryland	LEGAL STUDIES	Associate Degree
College of Southern Maryland	LEGAL STUDIES	Associate Degree
College of Southern Maryland	PARALEGAL STUDIES	Associate Degree
Collegium sanctorum angelorum	STUDIES IN ENGLISH AND LATIN	Lower Division Certificate
Community College of Balt County	CRIMINAL JUSTICE STUDIES	Lower Division Certificate
Community College of Balt County	GENERAL STUDIES	Associate Degree
Community College of Balt County	GENERAL STUDIES TRANSFER	Lower Division Certificate
Community College of Balt County	GLOBAL STUDIES	Lower Division Certificate
Community College of Balt County	LEGAL STUDIES	Associate Degree
Community College of Balt County	PARALEGAL STUDIES	Lower Division Certificate
Coppin State University	GLOBAL STUDIES	Bachelor's Degree
Coppin State University	INTERDISCIPLINARY STUDIES	Bachelor's Degree
Coppin State University	URBAN STUDIES	Bachelor's Degree
Frederick Community College	CIVIL WAR STUDIES	Lower Division Certificate
Frederick Community College	COMPUTER SCIENCE STUDIES CERTIFICATE	Lower Division Certificate
Frederick Community College	COMPUTER STUDIES	Lower Division Certificate
Frederick Community College	GENERAL STUDIES TRANSFER	Associate Degree
Frostburg State University	COMMUNICATION STUDIES	Bachelor's Degree
Frostburg State University	INTERNATIONAL STUDIES	Bachelor's Degree
Frostburg State University	LIBERAL STUDIES	Bachelor's Degree

Frostburg State University	PHYSICIAN ASSISTANT STUDIES	Master's Degree
Garrett College	GENERAL STUDIES TRANSFER	Associate Degree
Garrett College	PARAMEDIC STUDIES	Associate Degree
Garrett College	PROFESSIONAL & TECHNICAL STUDIES	Associate Degree
Goucher College	AMERICAN STUDIES	Bachelor's Degree
Goucher College	AREA STUDIES	Bachelor's Degree
Goucher College	COGNITIVE STUDIES	Bachelor's Degree
Goucher College	EDUCATION STUDIES	Bachelor's Degree
Goucher College	ENVIRONMENTAL STUDIES	Bachelor's Degree
Goucher College	EUROPEAN STUDIES	Bachelor's Degree
Goucher College	FRENCH TRANSNATIONAL STUDIES	Bachelor's Degree
Goucher College	INTEGRATIVE ARTS STUDIES	Bachelor's Degree
Goucher College	INTERNATIONAL/INTERCULTURAL STUDIES	Bachelor's Degree
Goucher College	LITERARY STUDIES	Bachelor's Degree
Goucher College	PEACE STUDIES	Bachelor's Degree
Goucher College	PRELEGAL STUDIES	Bachelor's Degree
Goucher College	WOMEN'S STUDIES	Master's Degree
Goucher College	WOMEN, GENDER, & SEXUALITY STUDIES	Bachelor's Degree
Hagerstown Community College	ENVIRONMENTAL STUDIES	Associate Degree
Hagerstown Community College	GENERAL STUDIES	Associate Degree
Hagerstown Community College	PARALEGAL STUDIES CERTIFICATE	Lower Division Certificate
Hagerstown Community College	TECHNICAL STUDIES	Associate Degree
Harford Community College	APPLIED DISABILITY STUDIES	Associate Degree
Harford Community College	COMMUNICATION STUDIES	Associate Degree
Harford Community College	GENERAL STUDIES TRANSFER	Associate Degree
Harford Community College	LEGAL STUDIES	Associate Degree
Harford Community College	PARALEGAL STUDIES	Lower Division Certificate
Harford Community College	TECHNICAL/PROFESSIONAL STUDIES	Associate Degree
Hood College	ARABIC AND MIDDLE EASTERN STUDIES	Bachelor's Degree
Hood College	EDUCATION - MULTIDISCIPLINARY STUDIES	Master's Degree
Hood College	ENVIRONMENTAL STUDIES	Bachelor's Degree
Hood College	GLOBAL STUDIES	Bachelor's Degree
Hood College	INTERDISCIPLINARY STUDIES	Bachelor's Degree
Hood College	LATIN AMERICAN STUDIES	Bachelor's Degree
Hood College	SPAN: IBERIAN & LATIN AMER CULT STUDIES	Bachelor's Degree
Hood College	SUSTAINABILITY STUDIES	Bachelor's Degree
Howard Community College	GENERAL STUDIES TRANSFER	Associate Degree
Johns Hopkins University	AFRICANA STUDIES	Bachelor's Degree
Johns Hopkins University	CHINESE & AMERICAN STUDIES	Post-Baccalaureate Certificate
Johns Hopkins University	CONTINUING ENGINEERING STUDIES	Post-Baccalaureate Certificate

Johns Hopkins University	DRAMA STUDIES (MDS)	Master's Degree
Johns Hopkins University	EAST ASIAN STUDIES	Bachelor's Degree
Johns Hopkins University	FILM AND MEDIA STUDIES	Bachelor's Degree
Johns Hopkins University	HUMANISTIC STUDIES	Bachelor's Degree
Johns Hopkins University	HUMANISTIC STUDIES	Doctorate (Research & Scholarship)
Johns Hopkins University	HUMANISTIC STUDIES	Master's Degree
Johns Hopkins University	INTERDISCIPLINARY HUMANISTIC STUDIES	Doctorate (Research & Scholarship)
Johns Hopkins University	INTERDISCIPLINARY STUDIES	Bachelor's Degree
Johns Hopkins University	INTERNATIONAL STUDIES	Doctorate (Research & Scholarship)
Johns Hopkins University	INTERNATIONAL STUDIES	Master's Degree
Johns Hopkins University	INTERNATIONAL STUDIES	Post-Baccalaureate Certificate
Johns Hopkins University	INTERNATIONAL STUDIES	Bachelor's Degree
Johns Hopkins University	INTERNATIONAL STUDIES (DIPLOMA, BOLOGNA)	Post-Master's Certificate
Johns Hopkins University	LATIN AMERICAN STUDIES	Bachelor's Degree
Johns Hopkins University	MUSEUM STUDIES	Master's Degree
Johns Hopkins University	NEAR EASTERN STUDIES	Bachelor's Degree
Johns Hopkins University	NEAR EASTERN STUDIES	Master's Degree
Johns Hopkins University	NEAR EASTERN STUDIES	Doctorate (Research & Scholarship)
Johns Hopkins University	QUANTITATIVE STUDIES	Bachelor's Degree
Loyola University Maryland	COMP. CULTURE & LIT. STUDIES	Bachelor's Degree
Loyola University Maryland	FORENSIC STUDIES	Bachelor's Degree
Loyola University Maryland	GLOBAL STUDIES	Bachelor's Degree
Loyola University Maryland	INTERDISCIPLINARY STUDIES	Bachelor's Degree
Loyola University Maryland	LIBERAL STUDIES	Master's Degree
Loyola University Maryland	THEOLOGICAL STUDIES	Master's Degree
Maryland Institute College of Art	ANIMATION & HUMANISTIC STUDIES	Bachelor's Degree
Maryland Institute College of Art	CERAMICS & HUMANISTIC STUDIES	Bachelor's Degree
Maryland Institute College of Art	CRITICAL STUDIES	Master's Degree
Maryland Institute College of Art	DRAWING & HUMANISTIC STUDIES	Bachelor's Degree
Maryland Institute College of Art	ENVRNMNTL DESIGN & HUMANISTIC STUDIES	Bachelor's Degree
Maryland Institute College of Art	FIBER & HUMANISTIC STUDIES	Bachelor's Degree
Maryland Institute College of Art	FILM & VIDEO & HUMANISTIC STUDIES	Bachelor's Degree
Maryland Institute College of Art	GENERAL FINE ARTS & HUMANISTIC STUDIES	Bachelor's Degree
Maryland Institute College of Art	GRAPHIC DESIGN & HUMANISTIC STUDIES	Bachelor's Degree
Maryland Institute College of Art	ILLUSTRATION & HUMANISTIC STUDIES	Bachelor's Degree
Maryland Institute College of Art	INTRDSCPLNRY SCLPTRE & HUMANSTIC STUDIES	Bachelor's Degree
Maryland Institute College of Art	PAINTING & HUMANISTIC STUDIES	Bachelor's Degree
Maryland Institute College of Art	PHOTOGRAPHY & HUMANISTIC STUDIES	Bachelor's Degree
Maryland Institute College of Art	PRINTMAKING & HUMANISTIC STUDIES	Bachelor's Degree

Maryland University of Integrative Health	HERBAL STUDIES	Post-Baccalaureate Certificate
Maryland University of Integrative Health	INTEGRATIVE HEALTH STUDIES (ONLINE)	Master's Degree
Maryland University of Integrative Health	INTEGRATIVE HEALTH STUDIES (ONLINE)	Post-Baccalaureate Certificate
McDaniel College	ARABIC AND MIDDLE EASTERN STUDIES	Bachelor's Degree
McDaniel College	ASIAN STUDIES	Bachelor's Degree
McDaniel College	ENVIRONMENTAL STUDIES	Bachelor's Degree
McDaniel College	FOOD STUDIES	Bachelor's Degree
McDaniel College	RELIGIOUS STUDIES	Bachelor's Degree
Montgomery College-All Campuses	COMMUNICATION STUDIES	Associate Degree
Montgomery College-All Campuses	ETHNIC SOCIAL STUDIES	Lower Division Certificate
Montgomery College-All Campuses	GENERAL STUDIES TRANSFER	Associate Degree
Montgomery College-All Campuses	PARALEGAL STUDIES	Associate Degree
Montgomery College-All Campuses	TRANSFER STUDIES	Lower Division Certificate
Montgomery College-All Campuses	WOMEN'S AND GENDER STUDIES	Lower Division Certificate
Morgan State University	AFRICAN AMERICAN STUDIES	Master's Degree
Morgan State University	APPLIED LIBERAL STUDIES	Bachelor's Degree
Morgan State University	INTERDISCIPLINARY EDUCATIONAL STUDIES	Bachelor's Degree
Morgan State University	INTERDISCIPLINARY STUDIES SOCIETAL EQUIT	Bachelor's Degree
Morgan State University	INTERNATIONAL STUDIES	Master's Degree
Morgan State University	MUSEUM STUDIES & HISTORICAL PRESERVATION	Post-Baccalaureate Certificate
Morgan State University	MUSEUM STUDIES & HISTORICAL PRESERVATION	Master's Degree
Mount St. Mary's University	COMMUNICATIONS STUDIES	Bachelor's Degree
Mount St. Mary's University	GENERAL STUDIES/ INTERDISCIPLINARY	Bachelor's Degree
Mount St. Mary's University	INTERNATIONAL STUDIES	Bachelor's Degree
Mount St. Mary's University	LIBERAL STUDIES	Master's Degree
Mount St. Mary's University	PHILOSOPHICAL STUDIES	Master's Degree
Mount St. Mary's University	SOCIAL STUDIES	Bachelor's Degree
Notre Dame of Maryland University	EARLY CHILDHOOD EDU/LIBERAL STUDIES	Bachelor's Degree
Notre Dame of Maryland University	ELEMENTARY EDUCATION/LIBERAL STUDIES	Bachelor's Degree
Notre Dame of Maryland University	INTERNATIONAL STUDIES	Bachelor's Degree
Notre Dame of Maryland University	RELIGIOUS STUDIES	Bachelor's Degree
Prince George's Community College	GENERAL STUDIES TRANSFER	Associate Degree
Prince George's Community College	TRANSFER STUDIES	Lower Division Certificate
Reid Temple Bible College	BIBLICAL STUDIES	Lower Division Certificate
Reid Temple Bible College	BIBLICAL STUDIES	Associate Degree
Reid Temple Bible College	GENERAL STUDIES	Lower Division Certificate
Reid Temple Bible College	GENERAL STUDIES	Associate Degree
Salisbury University	ENVIRONMENTAL STUDIES	Bachelor's Degree
Salisbury University	INTERDISCIPLINARY STUDIES	Bachelor's Degree
Salisbury University	INTERNATIONAL STUDIES	Bachelor's Degree

St. Mary's College of Maryland	ADVANCED MUSIC PERFORMANCE STUDIES	Post-Baccalaureate Certificate
St. Mary's College of Maryland	ASIAN STUDIES	Bachelor's Degree
St. Mary's College of Maryland	ENVIRONMENTAL STUDIES	Bachelor's Degree
St. Mary's College of Maryland	HUMAN STUDIES	Bachelor's Degree
St. Mary's College of Maryland	MUSIC PERFORMANCE STUDIES	Post-Baccalaureate Certificate
St. Mary's College of Maryland	PUBLIC POLICY STUDIES	Bachelor's Degree
St. Mary's College of Maryland	RELIGIOUS STUDIES	Bachelor's Degree
St. Mary's College of Maryland	THEATRE, FILM & MEDIA STUDIES	Bachelor's Degree
St. Mary's College of Maryland	WOMEN, GENDER, AND SEXUALITY STUDIES	Bachelor's Degree
St. Mary's Seminary and University	BIBLICAL STUDIES	Post-Baccalaureate Certificate
Stevenson University	COMMUNICATION STUDIES	Master's Degree
Stevenson University	COMMUNICATION STUDIES	Bachelor's Degree
Stevenson University	COMMUNICATION STUDIES	Bachelor's Degree
Stevenson University	FORENSIC STUDIES	Master's Degree
Stevenson University	INTERDISCIPLINARY STUDIES	Bachelor's Degree
Stevenson University	LEGAL STUDIES	Bachelor's Degree
Stevenson University	PROFESSIONAL STUDIES	Bachelor's Degree
Towson University	AUTISM STUDIES	Post-Baccalaureate Certificate
Towson University	COMMUNICATION STUDIES	Bachelor's Degree
Towson University	CULTURAL STUDIES	Bachelor's Degree
Towson University	DEAF STUDIES	Bachelor's Degree
Towson University	ENVIRONMENTAL SCIENCE AND STUDIES	Bachelor's Degree
Towson University	INTERDISCIPLINARY STUDIES	Bachelor's Degree
Towson University	INTERNATIONAL STUDIES	Bachelor's Degree
Towson University	JEWISH STUDIES	Master's Degree
Towson University	METROPOLITAN STUDIES	Bachelor's Degree
Towson University	PHYSICIAN ASSISTANT STUDIES	Master's Degree
Towson University	PROFESSIONAL STUDIES	Post-Baccalaureate Certificate
Towson University	PROFESSIONAL STUDIES	Master's Degree
Towson University	PROFESSIONAL STUDIES	Post-Master's Certificate
Towson University	RELIGIOUS STUDIES	Bachelor's Degree
Towson University	WOMEN'S & GENDER STUDIES	Master's Degree
Towson University	WOMEN'S & GENDER STUDIES	Post-Baccalaureate Certificate
Towson University	WOMEN'S & GENDER STUDIES	Bachelor's Degree
Univ. of Maryland Eastern Shore	GENERAL STUDIES	Bachelor's Degree
Univ. of Maryland Eastern Shore	PHYSICIAN ASSISTANT STUDIES	Master's Degree
Univ. of Maryland University College	COMMUNICATION STUDIES	Bachelor's Degree
Univ. of Maryland University College	COMPUTER STUDIES	Upper Division Certificate
Univ. of Maryland University College	EAST ASIAN STUDIES	Bachelor's Degree
Univ. of Maryland University College	FOREIGN LANGUAGE AREA STUDIES	Upper Division Certificate
Univ. of Maryland University College	GENERAL AND LIBERAL STUDIES	Associate Degree

Univ. of Maryland University College	GENERAL STUDIES	Bachelor's Degree
Univ. of Maryland University College	GERONTOLOGY AND AGING STUDIES	Bachelor's Degree
Univ. of Maryland University College	LEGAL STUDIES	Bachelor's Degree
Univ. of Maryland University College	MANAGEMENT STUDIES	Bachelor's Degree
Univ. of Maryland University College	WOMEN, GENDER, AND SEXUALITY STUDIES	Upper Division Certificate
Univ. of Maryland, College Park	AFRICAN AMERICAN STUDIES	Upper Division Certificate
Univ. of Maryland, College Park	AFRICAN AMERICAN STUDIES	Bachelor's Degree
Univ. of Maryland, College Park	AFRICAN AMERICAN STUDIES	Post-Baccalaureate Certificate
Univ. of Maryland, College Park	AMERICAN STUDIES	Bachelor's Degree
Univ. of Maryland, College Park	AMERICAN STUDIES	Master's Degree
Univ. of Maryland, College Park	AMERICAN STUDIES	Doctorate (Research & Scholarship)
Univ. of Maryland, College Park	ARABIC STUDIES	Bachelor's Degree
Univ. of Maryland, College Park	ASIAN AMERICAN STUDIES	Upper Division Certificate
Univ. of Maryland, College Park	CINEMA AND MEDIA STUDIES	Bachelor's Degree
Univ. of Maryland, College Park	DIGITAL STUDIES IN THE ARTS & HUMANITIES	Post-Baccalaureate Certificate
Univ. of Maryland, College Park	EAST ASIAN STUDIES	Upper Division Certificate
Univ. of Maryland, College Park	GERMAN STUDIES	Master's Degree
Univ. of Maryland, College Park	GERMAN STUDIES	Bachelor's Degree
Univ. of Maryland, College Park	INDIVIDUAL STUDIES	Bachelor's Degree
Univ. of Maryland, College Park	INFORMATION STUDIES	Doctorate (Research & Scholarship)
Univ. of Maryland, College Park	ITALIAN STUDIES	Bachelor's Degree
Univ. of Maryland, College Park	JEWISH STUDIES	Post-Baccalaureate Certificate
Univ. of Maryland, College Park	JEWISH STUDIES	Master's Degree
Univ. of Maryland, College Park	JEWISH STUDIES	Bachelor's Degree
Univ. of Maryland, College Park	JOURNALISM STUDIES	Doctorate (Research & Scholarship)
Univ. of Maryland, College Park	LATIN AMERICAN AND CARIBBEAN STUDIES	Post-Baccalaureate Certificate
Univ. of Maryland, College Park	LATIN AMERICAN AND CARRIBEAN STUDIES	Upper Division Certificate
Univ. of Maryland, College Park	LEADERSHIP STUDIES	Upper Division Certificate
Univ. of Maryland, College Park	LGBTQ STUDIES	Upper Division Certificate
Univ. of Maryland, College Park	MODERN FRENCH STUDIES	Doctorate (Research & Scholarship)
Univ. of Maryland, College Park	NATIONAL SECURITY STUDIES	Post-Baccalaureate Certificate
Univ. of Maryland, College Park	PERSIAN STUDIES	Bachelor's Degree
Univ. of Maryland, College Park	POLICY STUDIES	Doctorate (Research & Scholarship)
Univ. of Maryland, College Park	POPULATION STUDIES	Post-Baccalaureate Certificate
Univ. of Maryland, College Park	PROFESSIONAL STUDIES	Post-Baccalaureate Certificate
Univ. of Maryland, College Park	PROFESSIONAL STUDIES	Master's Degree
Univ. of Maryland, College Park	THEATRE & PERFORMANCE STUDIES	Master's Degree
Univ. of Maryland, College Park	THEATRE & PERFORMANCE STUDIES	Doctorate (Research & Scholarship)
Univ. of Maryland, College Park	WOMEN, GENDER, AND SEXUALITY STUDIES	Bachelor's Degree

Univ. of Maryland, College Park	WOMEN, GENDER, AND SEXUALITY STUDIES	Post-Baccalaureate Certificate
Univ. of Maryland, College Park	WOMEN, GENDER, AND SEXUALITY STUDIES	Upper Division Certificate
Univ. of Maryland, College Park	WOMEN, GENDER, AND SEXUALITY STUDIES	Master's Degree
Univ. of Maryland, College Park	WOMEN, GENDER, AND SEXUALITY STUDIES	Doctorate (Research & Scholarship)
University of Baltimore	FORENSIC STUDIES	Bachelor's Degree
University of Baltimore	INTERDISCIPLINARY STUDIES	Bachelor's Degree
University of Baltimore	LEGAL STUDIES	Master's Degree
University of Baltimore	LEGAL STUDIES	Bachelor's Degree
University of Baltimore	PROFESSIONAL COUNSELING STUDIES	Post-Baccalaureate Certificate
University of Maryland, Baltimore County	AFRICANA STUDIES	Bachelor's Degree
University of Maryland, Baltimore County	AMERICAN STUDIES	Bachelor's Degree
University of Maryland, Baltimore County	ANCIENT STUDIES	Bachelor's Degree
University of Maryland, Baltimore County	ASIAN STUDIES	Upper Division Certificate
University of Maryland, Baltimore County	ASIAN STUDIES	Bachelor's Degree
University of Maryland, Baltimore County	ENVIRONMENTAL STUDIES	Bachelor's Degree
University of Maryland, Baltimore County	GENDER & WOMEN'S STUDIES	Upper Division Certificate
University of Maryland, Baltimore County	GENDER & WOMEN'S STUDIES	Bachelor's Degree
University of Maryland, Baltimore County	GENDER & WOMEN'S STUDIES	Post-Baccalaureate Certificate
University of Maryland, Baltimore County	GEOGRAPHY AND ENVIRONMENTAL STUDIES	Bachelor's Degree
University of Maryland, Baltimore County	GLOBAL STUDIES	Bachelor's Degree
University of Maryland, Baltimore County	HISTORICAL STUDIES	Master's Degree
University of Maryland, Baltimore County	JAZZ STUDIES	Bachelor's Degree
University of Maryland, Baltimore County	MBA PREPARATORY STUDIES	Upper Division Certificate
University of Maryland, Baltimore County	MEDIA & COMMUNICATION STUDIES	Bachelor's Degree
University of Maryland, Baltimore County	MEDIA & COMMUNICATION STUDIES	Upper Division Certificate
University of Maryland, Baltimore County	PRE-PROFESS. STUDIES IN ACCOUNTING	Upper Division Certificate
University of Maryland, Baltimore County	PROFESSIONAL STUDIES	Post-Baccalaureate Certificate
University of Maryland, Baltimore County	PROFESSIONAL STUDIES	Master's Degree
University of Maryland, Baltimore County	SECURITY STUDIES	Upper Division Certificate
Washington Adventist University	GENERAL STUDIES	Associate Degree
Washington Adventist University	GENERAL STUDIES	Bachelor's Degree
Washington Adventist University	LIBERAL STUDIES	Bachelor's Degree
Washington Adventist University	POLITICAL STUDIES	Bachelor's Degree
Washington Adventist University	RELIGIOUS STUDIES	Bachelor's Degree
Washington Bible College	BIBLICAL STUDIES	Post-Baccalaureate Certificate
Washington Bible College	BIBLICAL STUDIES	Lower Division Certificate
Washington Bible College	BIBLICAL STUDIES	Associate Degree
Washington Bible College	BIBLICAL STUDIES	Upper Division Certificate
Washington Bible College	BIBLICAL STUDIES	Bachelor's Degree
Washington Bible College	BIBLICAL STUDIES (Masters of Arts)	Master's Degree

Washington Bible College	GENERAL STUDIES	Bachelor's Degree
Washington College	AMERICAN STUDIES	Bachelor's Degree
Washington College	COMMUNICATIONS AND MEDIA STUDIES	Bachelor's Degree
Washington College	ENVIRONMENTAL STUDIES	Bachelor's Degree
Washington College	FRENCH STUDIES	Bachelor's Degree
Washington College	GERMAN STUDIES	Bachelor's Degree
Washington College	HISPANIC STUDIES	Bachelor's Degree
Washington College	INTERNATIONAL STUDIES	Bachelor's Degree
Women's Institute of Torah Seminary & College	JEWISH CULTURE AND PROFESSIONAL STUDIES	Bachelor's Degree
Women's Institute of Torah Seminary & College	JUDAIC STUDIES	Bachelor's Degree
Wor-Wic Community College	COMPUTER STUDIES TRANSFER	Associate Degree
Wor-Wic Community College	GENERAL STUDIES	Lower Division Certificate
Wor-Wic Community College	GENERAL STUDIES TRANSFER	Associate Degree

Appendix E: MHEC Approval for UMGC to Assess non-ACE-evaluated Trainings for Credit



Larry Hogan
Governor
Boyd K. Rutherford
Lt. Governor
Ian D. MacFarlane
Chair
James D. Fielder, Jr., Ph. D.
Secretary

July 27, 2020

Blakely R. Pomietto, MPH
Senior Vice President for Academic Affairs and Chief Academic Officer
University of Maryland Global Campus
3501 University Boulevard East
Adelphi, MD 20783

Dear Vice President Pomietto:

We have reviewed your request to establish an assessment method at the University of Maryland Global Campus (UMGC) to award credit hours through an assessment procedure not otherwise covered in COMAR 13B.02.02.16. We know that many individuals engage in postsecondary education with a breadth of prior learning – particularly military experience – that may not be formally recognized by our colleges and universities. While COMAR 13B.02.02.16 establishes three explicit methods of awarding credit for prior learning¹, there is a fourth provision allowing for institutions to use another assessment method approved to demonstrate competencies.

The assessment procedure that you have proposed is thorough and appears to mirror the national standard provided by the American Council on Education (ACE) and the National College Credit Recommendation Service (NCCRS). It is applaudable that the UMGC endeavored to pilot the procedures proposed with the Marine Corps' Intelligence Surveillance Reconnaissance (ISR) Systems Engineer Course.

After reviewing the materials provided, we have determined that the policy is complete and that all assessment methods will be effective for assessing students' competencies. UMGC is approved to use the method and materials provided in the proposal (attached) to award credit for prior learning to students who have participated in the applicable training. Should UMGC deviate or make changes to the method or materials, UMGC is expected to submit a revised request for review. I wish you continued success.

¹ (a) Successful completion of an acceptable standardized examination such as the College Level Examination Program; (b) An examination developed by the institution; or (c) A portfolio assessment.



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

TOPIC: Results of Periodic Reviews of Academic Programs, 2021-2022

COMMITTEE: Education Policy and Student Life

DATE OF COMMITTEE MEETING: Tuesday, January 10, 2023

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 at the departmental level. 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 reviews the draft full report prior to submission 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 comments are shared with the institutions for appropriate action prior to final submission to the Chancellor. Comments may include requests for additional information or the need 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 for monitoring academic quality and productive use of resources. The following narratives and data tables provide information on enrollment and degrees awarded during the five years prior to the submission of the report.

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:** January 10, 2023

BOARD ACTION:

DATE:

SUBMITTED BY: Joann A. Boughman 301-445-1992 **EMAIL:** jboughman@usmd.edu

2021-2022 Periodic Review of Academic Programs Summary

Existing academic programs are required to submit a report 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 comments are shared with the institutions for appropriate action prior to final submission to the Chancellor.

A total of 145 academic programs were reviewed during the 2021-2022 period program review period, with an additional five (5) being deferred to February 2023 to accommodate the number of changes in the academic leadership at one institution. These results will be shared separately with the Board of Regents in late Spring 2023.

The 2021-2022 reports represent an 11.5 percent increase in programs reviewed compared to the 2020-2021 period of 130 programs reviewed. The increase in reviews represents the seven-year schedule when programs come due, adjustments to align programs with reaccreditation / accreditation self-studies, and the number of new programs approved seven years prior to address growing workforce means.

All enrollments and degrees awarded for the programs reviewed in this report base found in the “2021-2022 Periodic Review of Academic Program Enrollments and Degrees Awarded by Institution” section starting on page 7 of this report.

Number of Programs Reviewed (n = 145)

- Associate’s^[1]: 0
- Bachelor’s: 69
- Master’s: 40
- Master/Doctorates 10
- Doctorates: 5
- Certificates: 21

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

Results of Program Accreditation Reviews

During this reporting period, thirty-one (31) programs (approximately 21% of all programs reviewed) underwent re-accreditation reviews. The programs reviewed by their discipline-specific accrediting organizations are as follows:

Coppin University:

The Bachelor in Elementary Education, the Bachelor in Early Childhood Education, the Master of Education in Special Education, and the Post-Master Certificate in Public School Administrator I are currently accredited by the National Council of the Accreditation of Teacher Education (NCATE) and the Maryland State Department of Education (MSDE). The School of Education began its self-study during fall semester 2021 and completed it in July 2022, and an accreditation site visit will be conducted in Spring by the Council for the Accreditation of Educator Preparation. (CAPE)

The *Master of Science in Clinical Mental Health Rehabilitation Counseling* is accredited by the Council for the Accreditation of Counseling and Related Educational Programs. The program review process was completed in 2021-2022.

Frostburg State University:

The *Bachelor of Science in Recreation and Parks Management* is accredited by the Council on Accreditation Parks, Recreation, Tourism, and Related Professions (COAPRT) and was successfully reviewed in AY 2021-2022.

Salisbury University:

The *Bachelor of Science in Early Childhood Education*, the *Bachelor of Science in Elementary Education*, the *Bachelor of Science in Physical Education*, the *Bachelor of Arts in English for Speakers of Other Languages (ESOL)*, the *Master in Educational Leadership*, the *Master in Education – Reading Specialist*, and the *Master of Arts in Teaching* are accredited by the Association for Advancing Quality in Educator Preparation (AAQEP). AAQEP evaluated all education programs in the Seidel School of Education on each of its four standards and determined that each of SU’s initial and advanced education programs met each standard.

The *Bachelor of Science in Exercise Science* and the *Master of Science in Health and Human Performance* are accredited by the Commission on Accreditation of Allied Health Education Programs, have met all compliance standards, and were approved for continuing accreditation in May 2022.

Towson University:

The *Bachelor of Science in Forensic Chemistry* and the *Master of Science in Forensic Science* are accredited by the Forensic Science Education Programs Accreditation Commission (FEPAC). The self-study and on-site evaluation were reviewed and evaluated by the FEPAC Commission in February 2022 at the Commission’s annual meeting, with the result that both programs were given full reaccreditation for five years.

University of Maryland College Park:

Music-Professional (BM); *Music-Liberal Arts (BA)*; *Music Education (MM, MA)*; *Ethnomusicology (MA)*; *Music (MA)*; and *Music (MM, MA)* are accredited by the National Association of Schools of Music. While the formal accreditation renewal process is still in progress, the review team had the perspective that all standards have been met at both the undergraduate and graduate levels.

University of Maryland Eastern Shore:

The *Accounting (BS)*, *Business Administration (BS)*, *Finance (BS)* and *Marketing (BS)* programs were reviewed and re-accredited by AACSB International in 2021. Though not officially a component of this PPR, the 2021 review recommended a revision to the program’s Assurance of Learning plan and the addition of a data analytics course to the curriculum.

The *Construction Management Technology (BS)* is accredited by the American Council for Construction Education (ACCE). The ACCE’s Team Report review indicated there were no program weaknesses. The program was reaccredited for another a six-years through 2028.

University of Maryland Global Campus:

The *Master of Business Administration* is accredited by the International Accreditation Council for Business Education (IACBE). According to the IACBE process, the commission will discuss the report and the recommendation of the reviewers and will present their decision in December 2022.

Low Degree Productivity

MHEC Definition:

Bachelor’s (including U.D.C.s):	< 5 in most recent year or total of 15 in last three years
Master’s (including P.B.C.s and PMC’s):	< 2 in most recent year or total of 6 in last three years
Doctorate:	< 1 in most recent year or total of 3 in last three years

In accordance with MHEC definitions, twelve (12) programs or 8.3% of programs reviewed in this period are considered to demonstrate “low productivity.” Of these 12 programs, three (3) programs were suspended or discontinued since their last seven-year periodic review because of low enrollments and low degree productivity as determined by program performance evaluations. The types of programs identified in this report as low productivity include:

- 5 bachelor’s degree programs,
- 3 master’s degree programs,
- 1 combined master/doctoral or doctoral degree programs, and
- 3 certificates: 1 post-baccalaureate certificate (P.B.C.) and 2 post-master’s certificates (P.M.C.)

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

Bowie State University:

- *Post Baccalaureate Certificate (PBC) Counseling Psychology:* The Counseling Psychology department reports an action plan to address low enrollments and low degree productivity by increasing marketing and recruitment activities. This includes (1) the development of a recruitment plan, (2) a review of the content of existing marketing content to ensure its alignment with student career goals, (3) an increase in and more targeted communications including a digital and direct mail campaign, and (4) a shift in some of the communications strategies to better align with open houses, class visits (undergraduate programs), a list of careers associated with the certificate, and local recruitment communication to attract future students

Coppin State University:

- *Public School Administrator I (Post Masters Certificate):* The PPR indicated that low enrollment for the ADMIN I program is impacted by competing universities that offer the program online and at a lower tuition. A plan to address administrative and programmatic issues in growing enrollments, include (1) clarifying admission entry into the pathway, (2) awarding students in the master’s program with the certificate, (3) offering the program online or hybrid, (4) adjusting the tuition to better align with competing universities, and (5) using more print and social media to attract new students.
- *Master of Education in Special Education:* The PPR indicated that enrollment was severely impacted by the COVID-19 pandemic and are now evaluating ways to grow enrollment, as CSU provides a vital pipeline of highly qualified and committed teachers to the State. Faculty have identified opportunities to revisit course offerings to provide more diverse learning experiences and the University is deploying multiple marketing strategies using newly hired staff to assist in direct and routine efforts including the use of print and social media platforms. The degrees awarded are low, but faculty are hopeful that the number of graduates will begin to rise as more students are projected to complete during the spring 2023 semester. Faculty noted that the SPED

M.Ed. program should be continued because it is one of the high need areas that is highlighted in the annual workforce report.

Frostburg State University:

- *Bachelor of Science Adventure Sports Management (ASM) -- Suspended:* The ASM program was established in 2015 as a collaborative program between FSU and Garrett College. Over the years, the program has faced several challenges associated with the dual institution structure of the ASM program. Furthermore, consumer awareness of the difference between the ASM program and other offerings - such as Recreation and Parks Management - has made marketing and enrollment more of a challenge. Since inception, two significant curricular revisions have been made to address the issues identified. However, student enrollment in the program has been consistently low over the years, and the program has not been able to retain appropriate staffing. The highest number of students with a declared major in Adventure Sports Management was 13 in 2020. This spike in enrollment may be attributed to confusion over the substance of ASM focus (often students viewed it as a sport management major). Therefore, the Department of Kinesiology and Recreation proposed the suspension of the Adventure Sports Management major, and the request for suspension was approved by MHEC with implementation starting in the fall of 2022. A teach-out plan is in effect for currently enrolled students.
- *Bachelor of Science Philosophy:* Most recently, Philosophy faculty modified the program's curriculum, creating three new tracks (Philosophical Studies, Law School Preparation, and Social Justice) to reconfigure the major and make career paths more visible to students. This substantial modification of the curriculum gained final state and institutional approval in December 2021 and officially launched in the fall of 2022. The department has developed a comprehensive two-year action plan which includes aggressively marketing the new curriculum on-campus and on the department website and highlighting careers and profiles of alumni; increasing outreach to freshman and sophomore majors in related programs by encouraging consideration of a double major; publicizing the recently reinvigorated dual-degree program with the UBALT School of Law; and requesting a fourth permanent faculty position.

Salisbury University:

- *Post-Master Certificate in Educational Leadership (Certificate of Advanced Study-CAS):* The CAS program requires 30 hours past the master's degree by Maryland regulation and is designed to further prepare educational leaders. Given the current pay scale structure in public school districts in the state, individuals completing the Certificate in Advance Study are not incentivized with additional salary or benefits. With the implementation of the Blueprint for Maryland's Future legislation, a new career ladder structure has been developed. As part of the new Career Ladder, and Administrator Track will include "Licensed Principal" and "Distinguished Principal" that will result from additional leadership training that the CAS in Educational Leadership can provide. The faculty in the Department of Educational Leadership will review and revise the CAS program curriculum to ensure it aligns to the Blueprint for Maryland's Future legislation Career Ladder for Educators, Administrator Track, to culminate with the top level "Distinguished Principal" designation with full implementation by 2025 as outlined in the Blueprint legislation.
- *Bachelor of Arts in English for Speakers of Other Languages (ESOL):* Although the B.A. ESOL was included and was endorsed in the 2021-2022 accreditation review by AAQEP (as a teacher preparation program), it is housed in the Fulton School of Liberal Arts. The structure between two schools has led to less-than-optimal communication about strategies to increase program

visibility and enrollments. Faculty and administrators associated with the B.A. ESOL and M.A. English TESOL track are committed to increasing enrollments, graduates and impacts of these programs. Given the number of students in Maryland PK-12 classrooms who are English Language Learners (ELLs) (>98,000 in 2020-2021) and as noted in the Blueprint for Maryland's Future and under the Workgroup on English Language Learners in Public Schools, ESOL instruction is much needed in the State. SU's B.A. ESOL is the only undergraduate K12 certification in Maryland. The deans of the two schools have been charged with developing a plan by the end of this academic year to recruit students, increase enrollments, and increase collaboration between the program-affiliated faculty. Whether through increasing effective marketing and recruitment of the stand-alone B.A. ESOL program, pulling the B.A. ESOL in as a track of the B.A. English program, or moving the program to the School of Education, B.A. ESOL graduates should increase to at least seven per year by AY2026-2027.

Towson University:

- *M.S. in Actuarial Science and Predictive Analytics – New Program:* Initial enrollments started in Fall 2019. At the time of the PPR, enrolled students had not yet completed the program.

University of Maryland, Baltimore County:

- *Upper Division Certificate (UDC) in Finance -- Discontinued:* Program discontinued when the minor in finance was created, and thus, certificates have not been awarded since 2016.

University of Maryland, College Park:

- *The Master of Science / Ph.D. in Behavior, Ecology, Evolution and Systematics – Suspension Pending:* The "BEES" program is in the process of being phased out. There are no admissions to it, but because there is still a student awaiting completion, it has not been formally suspended.

University of Maryland Eastern Shore:

- *Bachelor of Arts in History:* History is part of the general education curriculum and a vital part of the liberal arts foundation of the college degree. While the decline in history majors is partially attributable to the overall decline in the enrollment at the university, it is reflective of the national trend toward less interest in humanities disciplines. The lack of focused marketing of the major to high school students by the faculty, working in tandem with the Office of Admissions, can also be linked to the decline in majors. Additional marketing of the major and a curriculum redesign is expected to increase the number of majors by 10% over the next five years. Priorities and action steps with a timeline will be developed for a two-to-three-year process toward improvement plan.
- *Master of Science in Pharmaceutical Sciences:* Enrollment in the doctoral program is satisfactory, but the master's program has low enrollment. An important feature that impacted the master's program is that the Ph.D. in Pharmaceutical Sciences does not require a master's degree. Thus, many candidates go straight to the PhD program. In addition, UMES did not offer scholarships to its master's students as they do to their PhD students. Moving forward, UMES has allocated scholarships for master's students starting Fall 2022 and has developed a new strategy to market its programs via social media platforms and a university sponsored private sector initiative.

The following section, 2021-2022 Periodic Review of Academic Programs, provides enrollments and degrees awarded by institution and outlines actions by institution for all programs reviewed this period.

2021-2022 Periodic Review of Academic Programs

Bowie State University										
Program Title (Degree)	2017		2018		2019		2020		2021	
	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees
Child and Adolescent Studies (CAAS) (B)	93	46	118	32	119	49	98	53	72	49
Criminal Justice (B)	473	59	491	82	509	79	475	92	484	89
Counseling Psychology (M)	90	21	98	13	94	16	112	18	108	21
Counseling Psychology (PBC)	3	0	1	0	2	3	1	0	2	0
Sociology (B)	104	52	108	39	102	40	83	53	79	33

Notes:

- Child and Adolescent Studies (BS)*: The CAAS faculty agree with the external findings and recommendations as they align with the internal findings and recommendations. Additional faculty members are needed to support curriculum changes, career-laden concentrations, and the master’s program proposal. The addition of a child-development research lab is also noted as an ongoing campus collaboration opportunity. Furthermore, the suggestion to develop a new recruitment strategy to increase the number of students for the major is a priority for the program.
- Criminal Justice (B)*: In fall 2022, criminal justice became an independent department, and the program is working on hiring two new faculty members for AY2023, addressing an external recommendation for more faculty and decreased advisement responsibilities per faculty member. The advising structure will be re-evaluated, and the hiring of a professional discipline-specific adviser will be investigated as a viable option to lighten the advising load for full-time faculty. Additionally, the new department of criminal justice plans to collaborate with the Bowie State Thurgood Marshall Library to acquire more criminal justice journals and other resources to support students during their academic career.
- Counseling Psychology (Masters and PBC)*: The review shows that the program has outstanding faculty, strong leadership, and diversity and breadth in its scholarship and curricular offerings. Recommendations included hiring additional full-time faculty to teach core courses and share in the advising workload, increasing assessment activities to support programmatic improvement, and reviewing alignment of program and courses to ensure alignment with current industry standards (CACRAEAP).
- Sociology (B)*: The sociology program will continue to utilize internal evaluations, assessment findings, and annual reports to address the needs of the program and the students to meet its goals and student learning outcomes. While the program has experienced an enrollment decline in the last two years, it is likely due to mandatory online learning related to the pandemic, which decreased college enrollment and smaller, less visible programs were more likely to be affected by these circumstances. Nonetheless, the program has added two new faculty members in nine months with implementation of both internal and external recommendations underway as well as a transition plan for the new program coordinator.

2021-2022 Periodic Review of Academic Programs

Coppin State University										
Program Title (Degree)	2017		2018		2019		2020		2021	
	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees
Public School Administrator I (PMC)	10	0	9	2	4	1	2	1	0	0
Clinical Mental Health Rehabilitation Counseling (M)	67	19	75	9	71	15	50	11	46	25
Criminal Justice (B)	200	49	174	45	197	32	184	35	138	54
Criminal Justice (M)	30	8	22	12	23	2	16	7	17	6
Early Childhood Education (B)	74	26	87	13	92	16	84	18	78	11
Elementary Education (B)	57	8	67	3	51	4	45	8	31	4
Special Education (M)	1	4	1	0	5	0	6	1	9	0

Special Note:
The PPRs for five (5) programs are in progress and will be submitted in February 2023. The programs are the B.S. in Political Science, B.S. in Sociology, B.S. in Special Education, M.A. in Teaching, and the M.S. in Adult and General Education.

Notes:

- Criminal Justice (B / M)*: Overall, the program review assessment and feedback provided was favorable and the reviewer noted that, "...CSU criminal justice students will have a clear advantage towards moving the criminal justice system in the right direction." In terms of specific recommendations, the department is considering the addition of a diversity course; exploring other potential gaps in course offerings; evaluating the need for additional tenure track faculty in support of this and other new potential programs and seeking funding opportunities that allow for the hiring of student researchers and course buyouts that allow faculty to devote time to scholarship.
- Elementary Education (B)*: The School of Education is implementing a number of recommendations based on this review, including (1) providing additional Praxis Core workshops designed to enhance teacher candidates reading, writing, and mathematics skills; (2) adding more exposure to effective lesson planning; and (3) promoting the importance of cultural responsiveness in all teacher education programs. The School is also developing a plan to recruit approximately sixty minority students within the next few years for its teacher certification programs.
- Public School Administrator 1 (PMC)*: Feedback from the SPA/CAEP report submitted in September 2021 indicated that the ILPD faculty made numerous changes to all Public-School Administrator I rubrics, capstones, assessments, and projects since the last submission in September 2018, and as a result, the department's ADMIN I program achieved national recognition with no conditions. The PPR indicated that low enrollment for the ADMIN I program is impacted by competing with universities that offer the program online and with a lower tuition, and thus there is a need to address administrative and programmatic issues to grow enrollments, including (1) clarifying admission entry into the pathway, (2) awarding students in the master's program with the certificate, (3) offering the program online or hybrid, a (4) adjusting the tuition to better align with competing universities, and (5) using more print and social media to attract new students.

2021-2022 Periodic Review of Academic Programs

4. *Early Childhood Education (B)*: The Early Childhood Education program was reviewed in 2016 by the National Council for Accreditation of Teacher Education (NCATE), which advised recommended modification of the practicum and internship sequences. As a result, all students are required to complete a practicum experience in a childcare center. The internship experience was divided into two placements Pre-K grade 1 and grades 2-3. NCATE also recommended modifying the internship evaluation instrument to ensure that levels of performance are based on concepts found in specific standards; the ECED rubric has been modified accordingly. The greatest barrier to increased productivity is the Praxis examination. CSU is increasing the number of workshops and offering additional online tutorials to assist students with mastering certification requirements. Additionally, a recruitment plan is being developed to recruit approximately sixty minority students within the next few years.
5. *Master of Education in Special Education*: The external review noted that field Experiences and Clinical Practice Standards were being met and that information on the developmentally appropriate sequence of field experiences, grade levels, number of hours, and settings required of each has been clearly stated. Candidates progress through the sequenced field experiences and clinical practices, moving from observing practice to support to the teachers, and then to plan and teach mini lessons to small and whole groups of students. The program has adequate program assessments; however, the assessment process should take into consideration the nature of low enrollment for the program and the timeline in which the cycle of assessments occurs. The low enrollment is impacting the amount of data that is observable and useful to the program. The review emphasized that program faculty need to understand that continued collection and analysis of the assessment data are essential for the program to sustain national recognition and be able to make any enhancements to its program, which should be demonstrated during its next review cycle. The school is investigating innovative ways to revamp the program using recommendations from previous NCATE reports, input from CAEP, and internal committees.
6. *Clinical Mental Health Rehabilitation Counseling (M)*: The program was modified from the original master's degree in Rehabilitation Counseling due to changing market demands and the required standards of accreditation from the Council for Accreditation of Counseling and Related Educational Programs (CACREP). The master's in Rehabilitation Counseling program converted from a 49-credit hour program to a 60-credit hour program and the curriculum was updated to reflect the required standards set forth by the accreditor. There are no major concerns with the program or with program administration. Currently the program requires all students to complete the Counselor Education Comprehensive Exam (CECE) before they can graduate (or they can opt to successfully pass the Certified Rehabilitation Counselor exam.) All students have successfully passed the comprehensive exam under the new CECE format test.

2021-2022 Periodic Review of Academic Programs

Frostburg State University										
Program Title (Degree)	2017		2018		2019		2020		2021	
	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees
Adventure Sports Management (B) -- SUSPENDED	5	5	4	3	6	-	13	2	8	2
Health Science (B)	169	7	178	22	180	26	155	40	142	31
Mass Communication (B)	183	36	175	46	137	40	108	32	80	33
Philosophy (B)	9	6	7	6	5	4	5	1	4	2
Recreation and Parks Management (B)	72	24	77	16	80	24	73	26	67	19
Recreation, Parks, and Sport Management (M)	27	9	19	13	31	7	43	10	51	16
Theatre (B)	47	10	34	16	31	8	33	9	25	10

Notes:

- Adventure Sports Management (B.S.)* The ASM program was established in 2015 as a collaborative program between FSU and Garrett College. Over the years, the program has faced several challenges associated with the dual institution structure of the ASM program. Furthermore, consumer awareness of the difference between the ASM program and other offerings - such as Recreation and Parks Management - has made marketing and enrollment more of a challenge. Since inception, two significant curricular revisions have been made to address the issues identified. However, student enrollment in the program has been consistently low over the years, and the program has not been able to retain appropriate staffing. The highest number of students with a declared major in Adventure Sports Management was 13 in 2020. This spike in enrollment may be attributed to confusion over the substance of ASM focus (often students viewed it as a sport management major). Therefore, the Department of Kinesiology and Recreation suspended the major starting in the fall of 2022. A teach-out plan is in effect for currently enrolled students.
- Health Science (B.S.):* The Health Science Program is successfully fulfilling its intended role and support for the program was unanimously positive from both faculty and administration, though faced with declining and limited resources that impact other program elements. The greatest assets of the program are its diverse customizable curriculum and faculty. There are however limitations to the interdisciplinary structure that were identified. As currently formatted, the program lacks communication, representation at the College and University levels, budget and funding for new faculty, and directed marketing for recruitment of students. The structure and funding needs will be discussed with administration.
- Mass Communication (B.S.):* The program's curriculum has been recently updated to streamline focuses and reflect the current industry standards in all courses. These changes included consolidating from nine to four program focus areas (Digital Media Production, Digital Audio Production, Digital Video Production and Digital Media Strategies) and changing the credit hours required for each focus area from 18 to 15 hours. Recommendations include: (1) bringing Public Relations and Journalism into the program, given that many of the courses are already offered by Mass Communication; (2) collaborating with the College of Business; (3) revising the departmental assessment plan to include assessing students earlier in their academic career as well as in the capstone course; (4) exploring the feasibility of seeking accreditation through the Accrediting Council for Education in Journalism and Mass Communication (ACEJMC); and (5) creating a new relationship with the radio station from which students will benefit.

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.

2021-2022 Periodic Review of Academic Programs

4. *Philosophy (B.S.):* Most recently, Philosophy faculty modified the program's curriculum, creating three new tracks (Philosophical Studies, Law School Preparation, and Social Justice) to reconfigure the major and make career paths more visible to students. This substantial modification of the curriculum gained final state and institutional approval in December 2021 and officially launched in the fall of 2022. Additionally, the program is aggressively marketing the new curriculum on-campus and on the department website, which highlights careers and profiles of alumni. The publicity campaign also includes biannual outreach to freshman and sophomore majors in related programs, encouraging consideration of a double major, and publicizing the recently reinvigorated dual-degree program with University of Baltimore School of Law. Regarding its plan for dealing with its staffing challenge, the department will present the University with a request to add a fourth permanent faculty position. Additionally, the department has developed a comprehensive two-year action plan.
5. *Recreation, Parks and Sports Management (M.S.):* Most recently, substantial modifications were made and implemented in the fall of 2019 to offer two concentrations: 1) Recreation and Parks Management and 2) Sport Management; and a title change was made to reflect the addition of Sport Management. Opportunities for improvement included (1) investigate increasing Library resources for the RPSM program; (2) explore adding coursework on grants, fundraising, and political aspects of the profession; (3) provide support for program marketing; (4) evaluate shared core courses which might provide greater crossover between the concentrations; and (5) incorporate more student-faculty engagement opportunities.
6. *Recreation and Parks Management (B.S.):* Accredited by the Council on Accreditation Parks, Recreation, Tourism, and Related Professions (COAPRT), FSU's Recreation and Park Management program is the only program of its kind in the state of Maryland. The external (COAPRT) review highlighted the exceptional elements of the program, which included: 1) a comprehensive data gathering process, framing the curriculum and assessment with the CPRP competencies and 2) the exceptional student development of skills and confidence. Specific recommendations included: (2) updating its strategic plan; (2) closing the loop with the use of data at the course and program level; (3) revising the advising process to reflect the current change on campus and document and evaluate career and professional counseling of students; (4) beginning the succession transmission of knowledge process with the program director's retirement; and (5) advocating to keep the tenure-track position available.
7. *Theater (B.A.):* The review noted several programmatic strengths including: 1) an effective and engaged Theatre Executive Director; 2) well-equipped and well-maintained modern facilities; 3) engaged and passionate students; 4) strong and effective curriculum; and 5) vibrant faculty with a strong commitment to student and artistic success. Declining university and department enrollments and the loss of key positions were identified as pressing concerns. Specific short-term recommendations included: (1) working with a dance consultant to examine the dance studio; (2) hiring a Costume Shop Supervisor for the 2022-2023 academic year; and (3) developing a detailed recruitment plan for the next two to three years. In the long-term, recommendations were made to consider applying to the National Association of Schools of Theatre for accreditation, to establish relationships with theatre faculty at regional high schools to fully promote the FSU program and bolster recruiting, and to explore offering acting for film/camera as a means of attracting more students to the discipline.

2021-2022 Periodic Review of Academic Programs

Salisbury University										
Program Title (Degree)	2017		2018		2019		2020		2021	
	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees
Conflict Analysis & Dispute Resolution (B)	63	33	67	23	62	33	64	27	57	26
Conflict Analysis & Dispute Resolution (M)	40	18	32	19	33	10	31	21	19	10
Early Childhood Education (B)	171	48	180	39	208	48	201	28	188	49
Educational Leadership (M)	35	11	38	8	41	13	33	17	35	5
Educational Leadership (PMC)	2	0	9	1	14	2	22	12	15	4
Educational Leadership (CAS)	1	0	1	0	0	0	0	0	0	0
Elementary Education (B)	354	81	348	90	320	77	327	49	327	76
English for Speakers of Other Languages (B)	6	0	7	1	7	2	10	3	9	1
Exercise Science (B)	547	147	529	126	533	134	522	111	493	145
Health and Human Performance (M)	30	4	27	16	28	12	25	13	28	13
Physical Education (B)	104	22	94	18	115	25	115	25	102	35
Political Science (B)	130	38	143	34	138	32	111	37	93	17
Reading Specialist (M)	24	8	23	4	33	7	31	6	25	5
Sociology (B)	64	17	60	14	58	11	61	23	48	11
Teaching (M)	9	6	8	5	5	4	4	4	4	1
Notes:										
<p>1. <i>Conflict Analysis & Dispute Resolution (B.A.):</i> Enrollments in both the undergraduate and graduate programs have declined over the past few years. Major initiatives will focus on increasing enrollment through the recruitment of new students (traditional, transfer, and graduate) through a more deliberate focus on marketing, engaging with prospective students (including students currently at SU), convening lectures/panels/other events that raises the profile of CADR on campus, reviewing times that classes are offered, and minimizing the number of CADR course offerings that are offered at the same time (which presents a barrier to CADR majors). Of note is that CADR graduate students hold the largest number of assistantships of any program at SU. Other focal areas include examining curriculum and student outcomes; fully integrating the Bosserman Center for Conflict Resolution (BCCR) into the Department through better communication, collaboration, and transparency; building more intentional partnerships with other programs on campus; addressing any budget needs; and better engaging with alumni.</p> <p>2. <i>Early Childhood Education (B.S.), Elementary Education (B.S.) and Physical Education (B.S.):</i> These programs are accredited by the Association for Advancing Quality in Educator Preparation (AAQEP) and have met each of its standards. Moving forward the programs intends to (1) fully implement the Watermark Student Learning & Licensure digital portfolio platform as an assessment management system; (2) fully roll out the edTPA assessment and use the data from fall 2021 to offer additional resources or training for students, faculty and school partners; (3) add SPA and professional standards to syllabi by the spring of 2022; (4) work toward assessing completer performance which includes adding items to the alumni survey and using a completer program evaluation survey for all programs; (5) incorporate the concept of supporting students' international and global</p>										

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.

2021-2022 Periodic Review of Academic Programs

- perspectives to their programs by the end of AY 2021-2022; and (6) fully support the implementation of the Blueprint for Maryland's Future legislation.
3. *Educational Leadership (M.Ed), Reading Specialist (M.Ed) and the Master of Arts in Teaching*: The programs are accredited by the Association for Advancing Quality in Educator Preparation (AAQEP) and have met each of its standards. Moving forward, the program intends to (1) Establish inter-rater reliability for the rubrics used to assess all signature assignments; (2) Fully implement the Watermark Student Learning & Licensure d assessment management; (3) Conduct surveys upon program completion and a few years later; (4) Ensure all syllabi include alignment to the professional standards by Spring 2022; (5) Work toward assessing completer performance which includes adding items to the alumni survey and using a completer program evaluation survey for all programs; and (6) Fully support the implementation of the blueprint for Maryland's Future legislation, with particular focus on the Career Ladder structure for teacher leaders and administrators.
 4. *English for Speakers of Other Languages (ESO) (B.A.)*: The program is housed in the Department of English in the Fulton School of Liberal Arts, and not in the Seidel School of Education. The structure between two schools has led to less-than-optimal communication about strategies to increase program visibility and enrollments. Faculty and administrators associated with the B.A. ESOL and M.A. English TESOL tracks are committed to increasing enrollments, graduates and impacts of these programs. Given the number of students in Maryland PK-12 classrooms who are English Language Learners (ELLs) (>98,000 in 2020-2021) and as noted in the Blueprint for Maryland's Future, ESOL instruction is much needed in the State. Deans of the two schools have been charged with developing a plan by the end of this academic year to recruit students, increase enrollments, and increase collaboration between the program-affiliated faculty.
 5. *Exercise Science (B.S.)*: On May 23, 2022, the Exercise Science B.S. program was informed it met all compliance standards and was approved for continuing accreditation from CAAHEP. The external reviewers noted the following programs strengths: faculty profile, program/curriculum, engaged students, and supportive administration. Recommendations for improvement included upgrading facilities (i.e., areas in the Maggs Center do not have air-conditioning); incorporating "soft skills" throughout the curriculum to better prepare students when they start interacting with the general public; adding a class/assignment/activity that involves leading or working with groups; reviewing elective offerings, and updating "everyday" equipment like blood pressure units or EKG machines.
 6. *Health and Human Performance (M.S.)*: The program has met all compliance standards and was approved for continuing accreditation from the Commission on Accreditation of Allied Health Education Programs (CAAHEP). The external reviewers noted the several program strengths, including engaged faculty, continuous program development, quality internships, and supportive administration. Suggestions for improvement include improving some facilities (i.e., areas in the Maggs Center do not have air-conditioning); "firming-up" two tracks in master's degree for focus on an applied and clinical track; creating a respiratory specific class/elective; and updating "everyday" equipment.
 7. *Political Science (B.A.)*: Findings showed that that the "department has the right culture of self-improvement and joint effort that it needs to thrive" and noted a few suggestions for the POSC program including the need to socialize its mission, tell their story better (marketing), build a more systematic mechanism to reach and communicate with alums, develop a strategic approach to engaging students and converting them from gateway courses into majors; improve faculty diversity, enhance focus on skill development, and rename several courses to enhance student interest.
 8. *Sociology (B.A.)*: The program's biggest strength is its dedicated and student-oriented faculty and is particularly notable given the high degree of racial and ethnic diversity of students. The report showed that the program's student learning outcomes are well aligned with the recommendations of the American Sociological Association (ASA) and the six competencies in the "Sociological Literacy Framework" models for curricular development in the discipline. The program has done an excellent job scaffolding student skill development in multiple classes, including writing and oral skills, project work, and teamwork. Many students participate in internships, although internships are not required. Recommendations included diversifying faculty, strengthening student learning outcomes, developing a multi-year assessment plan, strengthening career-readiness, and providing more opportunity for experiential learning.

2021-2022 Periodic Review of Academic Programs

Towson University										
Program Title (Degree)	2017		2018		2019		2020		2021	
	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees
Actuarial Science and Predictive Analytics (M) (New Program)	-	-	-	-	-	-	6	0	8	1
Allied Health (B)	72	27	71	23	65	15	81	15	88	19
Applied and Industrial Mathematics (M)	26	13	33	6	26	16	22	6	18	7
Arts Integration (PBC)	37	0	17	17	29	0	36	16	35	0
Autism Studies (PBC)	49	35	43	25	42	21	29	18	41	21
Chemistry (B)	213	57	186	49	169	45	150	32	135	43
Clinician to Administrator Transition (PBC)	9	17	11	11	4	7	4	5	4	3
Economics (B)	285	86	285	87	296	74	270	89	204	95
Electronic Media and Film (B)	435	120	470	107	477	117	462	120	400	137
Forensic Chemistry (B)	187	19	197	25	187	22	195	21	176	24
Forensic Science (M)	51	15	54	30	38	16	33	16	34	12
Gerontology (B)	44	18	43	13	44	21	56	13	39	27
Health Care Management (B)	300	104	294	104	315	99	338	87	323	103
Health Education and Promotion (B)	428	96	463	92	403	130	326	107	268	113
Health Science (M)	75	31	86	20	82	26	86	34	56	32
Interdisciplinary Arts Infusion (M)	23	1	23	5	17	9	21	5	13	6
Homeland Integrated Security Management (M)	25	15	17	6	16	3	16	8	12	4
Security Assessment Management (PBC)	25	9	17	6	16	5	16	7	12	5
Mathematics (B)	254	44	247	52	252	39	214	58	204	48
Mathematics Education (M)	35	29	33	15	40	7	57	13	99	9
Notes:										
<p>1. <i>Actuarial Science and Predictive Analysis (MS)</i>: The review identified several opportunities including increasing the number of full-time dedicated lecturers; examining curriculum to determine if program size could be decreased with a greater focus on predictive analytics; providing faculty with competitive 3-2 teaching loads to enhance research climate; and improving its mentoring program for junior faculty.</p>										

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.

2021-2022 Periodic Review of Academic Programs

2. *Allied Health (BPTS)*: The review identified several opportunities for continuous improvement including establishing a departmental leadership succession plan; expanding faculty mentoring support and ensuring professional development and mentoring as needed for full and part-time non-tenure track faculty; developing a robust plan to recruit and retain students; and collaborating with Enrollment Management to implement active marketing strategies.
3. *Applied and Industrial Mathematics (MS)*: The review identified several opportunities including increasing the number of full-time dedicated lecturers; examining curriculum to determine if program size could be decreased with a greater focus on predictive analytics; providing faculty with competitive 3-2 teaching loads to enhance research climate; and improving its mentoring program for junior faculty.
4. *Arts Integration (PBC)*: Report findings indicate the need for the more University support, particularly from Marketing and Admissions, to increase program visibility and expanding assessment practices.
5. *Autism Studies (PBC)*: The PPR identified strong program leadership and talented faculty. Opportunities for improvement included developing strategies to expand enrollment given the increasing population of neurodiverse and autistic persons and increasing student diversity given more than 90% of students are female.
6. *Chemistry (BS)*: The program is among the top ten producers of BS in Chemistry degrees nationwide. Based on recommendations, the Chemistry department will develop strategies to improve recruitment and retention, and work to improve retention and graduation rates with more effective communication between course coordinators and by providing students with multiple resources for success.
7. *Clinician to Administrator Transition (PBC)*: The PPR identified several strengths including strong departmental leadership, the interdisciplinary nature of the department, and its dynamic faculty. Recommendations included the need to reverse declining enrollments; provide a strong and formalized mentoring plan for junior faculty; offer more support for scholarship and opportunities for students to collaborate on faculty research; and ensure learning outcomes are clear and be rigorously assessed.
8. *Economics (BA/BS)*: Review found that an active and engaged faculty are committed to both research and teaching and their serious commitment to enhancement and improvement of teaching and learning outcomes are impressive. A core of undergraduate students is actively engaged in conducting and presenting research and then moving on to successful career opportunities. Opportunities for continuous improvement include strategies to reduce the decline in enrollment (e.g., ensure efficient scheduling of upper-level courses, and maintain active involvement with admissions staff at Towson and be proactive in marketing the department and engaging with prospective students); develop an MS in Economic Analytics; and conduct a review of the economics major and revise as necessary to ensure content remains current and relevant.
9. *Electronic Media and Film (BS)*: The review found EMF to be a strong program with a comprehensive curriculum, modern facilities and equipment, committed faculty and staff, and a faculty with an overall prolific research and creative output.
10. *Forensics Chemistry (BS) and Forensic Science (MS)*: The self-study and on-site evaluation were reviewed and evaluated by the FEPAC Commission in February 2022 with the result that both programs were given full reaccreditation for five years. Minor suggestions included improving recruitment and advertising; improving the program's website to include student and professor research activities; and strengthening the curriculum through communication with forensic laboratory managers during the Academic Advisory Board yearly meetings and through interactions between the program director and professionals at regional and national conferences.
11. *Gerontology (BS)*: Review highlighted numerous strengths including strong departmental leadership; the interdisciplinary nature of the department, the focus on diversity, and the academic offerings which address a variety of health-related areas. Recommendations included developing a leadership succession plan for the Department, providing a strong and formalized mentoring plan for junior faculty; offering support for scholarship and opportunities for students to collaborate on faculty research; and developing a robust plan to recruit and retain students.

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12. *Health Care Management (BS)*: The program has been certified since 2002 by the Association of University Programs in Health Administration (AUPHA). It has seen a steady growth in overall student enrollment across the review period, with increased diversity of Black or African American student enrollment from 31% in 2016 to 40% in 2020. Opportunities for improvement included developing strategies to shift from a discovery major to destination major and recruiting faculty with practice and research expertise.
13. *Health Education and Promotion (BS)*: Review identified several strengths including that the program has increased diversity of Black or African American student enrollment with increases from 34% in 2016 to 47% in 2020, and its recent hiring of expert faculty with rigorous programs of research. Opportunities for improvement included developing strategies to recruit and retain additional students, shift from a discovery major to destination major, and explore relevance of program curriculum with job market.
14. *Health Science (MS)*: The program has increased the diversity of Black or African American student enrollment from 39% in 2016 to 52% in 2020 while also increasing the enrollment of full-time students from 21% in 2016 to 30% in 2020. The opportunities that were identified included reviewing and revising the curriculum for currency and relevancy, and developing strategies to address declining enrollments
15. *Interdisciplinary Arts Infusion (MA)*: Degree productivity has been strong. However, moving forward, elevated levels of teacher burnout and the shifting laws in Maryland will complicate enrollment for the program (as it currently stands), soon, unless a new Governor reverses the Blueprint for Maryland's Future. Without a reversal, it is likely that extensive research will be needed as to how to expand the future pool of graduate students for MAIAI well beyond PK-12 educators.
16. *Integrated Homeland Security Management (MS) and Security Assessment & Management (PBC)*: The review identified a number of recommendations which are being addressed including creating a new mission and vision; developing a true interdisciplinary model for faculty; ensuring outreach efforts to key players in the region as well as federal resources; developing a new model for the program director role; continuing the program's focus on development and preparation of future leaders in the fields of homeland security and emergency management by modifying current program tracks; determining an effective marketing plan to recruit students; growing scholarships, and offering more support for student groups.
17. *Math (BS)*: Recommendations from the review included increasing the number of full-time dedicated lecturers, improving enrollment in the major through engaging in more outreach to attract STEM majors and improving communication with alumni to demonstrate to prospective students the benefit of the math major and use this to improve recruiting; re-examining the program's academic content to see if the overall program size could be decreased; providing faculty with competitive 3-2 teaching loads to support research, and improving its mentoring program for junior faculty.
18. *Math Education (MS)*: The review identified several recommendations including increasing the number of full-time dedicated lecturers; providing faculty with competitive 3-2 teaching loads; improving improve the research climate by providing more support for colloquia and seminars; and improving its mentoring program for junior faculty.

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University of Baltimore										
Program Title (Degree)	2017		2018		2019		2020		2021	
	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees
Applied Information Technology (B)	81	17	73	13	67	8	59	9	50	12
Interdisciplinary Studies (B)	169	26	147	20	120	17	88	15	49	14
Integrated Design (M)	55	19	47	14	45	7	49	13	51	13
Integrated Design Fine Arts (M)	25	9	23	3	21	1	16	5	9	7
Nonprofit Management and Social Entrepreneurship (M)	65	15	48	18	39	13	29	10	24	4
Policy, Politics, and International Affairs (B)	83	31	76	34	68	19	83	23	88	13

Notes:

- Applied Information Technology (BS):* The PPR identified numerous strengths including curriculum relevance, facilities and support services, establishment of an advisory board and on-going assessment activities. Recommendations included the need to add at least one full-time faculty member to the AIT program; address the declining enrollment; increase online and hybrid course offerings; find a niche area to differentiate the AIT program from other programs; create an advisory board composed of industry professionals and alumni; and adopt a competency-based model with stackable credits.
- Interdisciplinary Studies (BA):* Program strengths include its interdisciplinary design with a flexible curriculum combining Arts & Sciences and other university programs, the ability to welcome students from a variety of “stops” on the train track of higher education; and strong enrollment and retention of diverse students. Recommendations include the need to establish an advisory council and expand the program to USM’s USG campus.
- Integrated Design (MA):* Program faculty are addressing several recommendations including exploring a name change associated with the confusion with its sister program the MFA; highlighting the work of program alum; show casing student work; exploring best practices in teaching across a variety of modalities; and supporting accelerated options from its undergraduate programs.
- Integrated Design (MFA):* Numerous recommendations from the PPR are being evaluated including considering a change in the degree name to address confusion with its sister program, the MA in Integrated design; updating the University web pages and program materials; updating the reading list and candidacy requirements; reviewing the options to shorten the time to degree while still supporting our full-time working demographics; and forming a new Institute to increase the lectures, symposiums, and exhibitions that our students will be able to participate in.
- Nonprofit Management and Social Entrepreneurship (MS):* This program is a unique multidisciplinary program with full-time faculty. Recommended actions include developing an accelerated Bachelor degree to Master’s degree; working with MPA and MBA program directors to develop a two year schedule for classes; reviewing course syllabi to ensure that courses shared with other programs include topics unique to the nonprofit sector; developing an advocacy course; developing a graduate certificate program in Nonprofit Management as a feeder to the MS degree; offering an undergraduate Non-Profit Management course; broadening the use of adjuncts in the program; and developing an advisory board.
- Policy, Politics, and International Affairs (BA):* The program was redesigned to focus on public policy with an emphasis on the applied nature of public service as opposed to a research program in political science. Recommendations included updating curriculum to reflect current political issues; hiring more adjuncts to bring practical experience to students; reviewing the program’s mission statement; and providing opportunities for more student research.

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.

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University of Maryland, Baltimore										
Program Title (Degree)	2017		2018		2019		2020		2021	
	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees
Cellular and Molecular Biology Science (M)	22	7	20	10	17	12	19	6	15	4
Dental Biomedical Sciences (M)	37	17	37	14	32	14	25	10	21	14
Dental Biomedical Sciences (D)	10	1	12	2	12	0	17	4	14	1
Epidemiology and Human Genetics (M)	0	0	9	0	17	1	25	8	20	6
Epidemiology and Human Genetics (D)	48	6	45	8	42	7	46	1	44	6
Epidemiology and Human Genetics (PBC)	6	3	8	0	8	0	7	3	6	0
Molecular Microbiology & Immunology (M/D)	42	11	38	8	38	10	40	6	45	5
Pharmacy Sciences (M)	1	1	0	3	6	1	21	2	48	7
Pharmacy Sciences (D)	60	6	59	15	62	7	67	7	66	11
Pharmacometrics (M)	38	15	45	11	48	9	53	17	53	29
Physical Rehabilitation Sciences (D)	7	1	6	2	6	3	13	0	15	0
Regulatory Science (M)	51	33	44	26	53	26	56	23	57	29
Regulatory Science (PBC)	0	0	7	0	7	3	10	3	9	10

Notes:

- Cellular and Molecular Biology Science (MS)*: The program provides opportunities for students to train in labs across the entire biomedical spectrum. Opportunities for improvement include enhancing program identity, improving communication with faculty mentors, increasing support for working students, and exploring additional financial support for students.
- Dental Biomedical Sciences (MS, PhD.)*: Both programs provide ample training opportunities to all its students to equip them to be meaningful contributors to the scientific body of knowledge and perform research, teaching, and clinical service in the field of Dental Biomedical Sciences. Areas for improvement in the MS program include increasing the number of peer-reviewed publications per year, helping students enhance their writing and analytic skills; helping students identify feasible research topics, and developing centralized process for assessing program learning outcomes. Recommendations for Improvements in the Ph.D. program included examining the administrative structure of the Ph.D. programs in the dental score; developing a seminar series or journal club for all Ph.D. students in the dental school; developing a formal process for applicant selection and oversight of the program; providing additional financial support for students; and exploring how laboratory rotations can more fully support dissertation pathways.
- Epidemiology and Human Genetics (MS, PhD and PBC)*: PPR identified several opportunities for continuous improvement including the need to follow up with students about accessibility of courses at other institutions; provide opportunities for current students to meet and learn from alumni about entering the workforce and postdoc programs; consider dropping the GRE requirement if it is a barrier to recruitment of underrepresented students; increase funding for Teaching Assistant positions and training for Teaching Assistants; pool resources across

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programs to support a thorough bioinformatics sequence of courses or non-credit workshops; and increase the number of slots for funded PhD students.

4. *Molecular Microbiology & Immunology (MS, PhD)*: This self-study was undertaken with the overarching goal of reviewing the objectives, approaches, and outcomes in all facets of the program to assess MMI effectiveness and areas for improvement or growth. Recommendations included developing an executive committee to oversee coursework and student activities; forming a more cohesive curriculum committee to review evaluation and assessment results; offering a mandatory grant writing course; examining core courses to ensure they appropriately prepare students for qualifying examinations; and identifying forums to hear and address student issues.
5. *Pharmaceutical Sciences (MS, PhD)*: The PPR identified several strengths including quality of faculty; the large array of research opportunities for students to pursue; extensive state-of-the art facilities to conduct innovative research; and close connections with alumni that offer networking and mentoring opportunities to students. Challenges included growing the size of the PhD program; increasing support for students in their first year of study; obtaining funding to recruit high caliber students; and harmonizing the PhD and MS curricula.
6. *Pharmacometrics (MS)*: This program is the only one in the country to offer an MS in Pharmacometrics and the overall quality of this program is high as evidenced by its curriculum, faculty, and student/alumni feedback. Recommendations for improvement include hiring additional teaching faculty; increasing Teaching Assistant support; and adding more training with standardized tools used in the profession.
7. *Physical Rehabilitation Sciences (MS, PhD)*: PPR identified numerous program strengths and recommendations. Based on the review, the program is adding three new courses and is piloting one additional course; exploring strategies to grow enrollments; developing cost-effective strategies to teach a small number of students; obtaining training grants such as a T32; encouraging graduate faculty to include student positions in grant submissions; assisting students to obtain pre-doctoral funding; and offering graduate assistantships that includes a percent of clinical practice.
8. *Regulatory Science (MS, PBC)*: The strength of the program is its science driven understanding of drug product development and regulation. Program strengths include excellent facilities and high student satisfaction. Faculty in PSC and PHSR are productive and have additional teaching responsibilities and research interests. Challenges and opportunities were identified, including in the areas of faculty recruitment (no dedicated faculty assigned to program), course prioritization, staffing needs, promotion needs, and alumni outreach.

2021-2022 Periodic Review of Academic Programs

University of Maryland, Baltimore County										
Program Title (Degree)	2017		2018		2019		2020		2021	
	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees
Economics (B)	233	58	239	41	210	56	219	47	228	37
Financial Economics (B)	361	83	347	96	316	94	303	81	342	77
Economic Analysis (M)	15	4	11	6	12	4	11	1	11	6
Finance (UDC) -- DISCONTINUED	7	0	1	0	1	0	1	0	0	0
Management Accounting (UDC)	13	28	16	9	13	12	11	9	8	7
Pre-Professional Studies in Accounting (UDC)	37	26	36	29	28	20	25	22	26	15
Education (M)	143	-	114	69	99	25	101	27	74	37
Global Studies (B)	145	29	138	28	139	27	116	31	97	27
Language, Literacy & Culture (M) <i>(NOTE: MA degree for those students who have completed most, but not all, of the requirements for the PhD degree. No recruitment for MA)</i>	-	1	-	1	-	1	-	-	-	-
Language, Literacy & Culture (D)	58	1	59	6	57	5	60	7	50	10
Cultural Anthropology (B)	40	15	45	9	37	12	44	14	30	8
Public Health (B)	263	108	260	94	238	99	251	71	253	76
Sociology (B)	157	57	148	53	134	37	159	47	146	48
Applied Sociology (M)	30	9	24	15	29	8	25	7	31	7
Social Dimensions of Health (UDC)	-	-	-	-	-	-	20	2	12	16
Social Dimensions of Health (PBC)	-	-	-	-	5	-	5	2	4	5
The Nonprofit Sector (PBC)	4	4	2	68	8	4	5	7	4	6
Applied Social Research Method (PBC)	-	-	-	-	-	-	8	-	2	7
Teaching English for Speakers of Other Languages (M)	78	31	79	30	66	31	74	21	76	31
Teaching English for Speakers of Other Languages (PBC)	37	18	34	28	25	16	31	17	25	16

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.

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Notes:

1. *Economics (B), Financial Economics (B), Economic Analysis (M), Finance (UDC), Management Accounting (UDC), and Pre-Professional Studies in Accounting (UDC)*: Review recommendations included providing support for the newly endowed faculty position; review teaching load, research expectations and professional development for ECON faculty given UMBC's recent R1 status; review curriculum for targeted enhancements; providing more guidance to students on career opportunities; and improve student advising as related to time-to-degree completion.
2. *Education (MA)*: Program was positively reviewed. Recommendations included hiring/appointing a Program Director; re-conceptualizing how the MAE program can respond to the changes in the National Board for Professional Teaching Standards model; developing more robust assessment processes; and increasing visibility for Education as part of a balanced portfolio of university programs.
3. *Global Studies (BA)*: Broad areas of strength for the GLBL program and ones in which our students have been able to successfully market themselves include immigrant and refugee support, global health initiatives, conflict resolution projects, policy programming and global risk management. Recommended changes include adding additional infrastructure and increased institutional support; establishing a new advisory to help development program; revising the foreign language requirement; re-examining the curriculum in terms of required core course; enhancing program marketability; and providing students with info on relevant internship and independent research opportunities.
4. *Language, Literacy & Culture (MA, Ph.D)*: LLC faculty and affiliated faculty are highly accomplished scholars, and their research relates to the Program goals and curriculum. Another strength is the high graduation rate and the faculty advising and mentoring needed for this level of success. Recommendations included the need to sustain UMBC's R1 status by reinforcing the LLC doctoral program as a national and international destination while maintaining its regional importance; increase core faculty; increase the number of full-time (FT) Graduate Assistantships (GA); and reconfigure program and faculty assessment.
5. *Cultural Anthropology (BA), Public Health (BA), Sociology (BA), Applied Sociology (MA), Social Dimensions of Health (UDC, PBC), the Non-Profit Sector (PBC), and Applied Social Research Method (PBC)*: Sociology, Anthropology and Public Health (SAPH) is a highly functional and collegial department that is complex and interdisciplinary. Numerous recommendations were made including establishing departmental vision statement; increasing public health faculty; aligning curriculum; enhancing PBHL curriculum with Council on Education in Public Health competencies and evaluating feasibility of its accreditation; establishing SOCY learning objectives, increasing support for undergraduate advising; revise PBHL program learning goals for greater clarity; and evaluating ANTH program curriculum.
6. *Teaching English for Speakers of Other Languages (MA, PBC)*: The TESOL MA program has continued to offer high quality instruction and to grow enrollments and graduation rates since the last APR. Key assessment data provides strong direct evidence that the TESOL program is meeting learning outcomes and is preparing TESOL educators to meet the needs of the diverse student populations in different learning contexts. Resulting action plan includes allocating human resources to address workload issues related to advising; reviewing the configuration of synchronous and asynchronous course offerings; exploring directions for continued growth; and addressing unmet need for academic resources (i.e., library resources).

2021-2022 Periodic Review of Academic Programs

University of Maryland, College Park										
Program Title (Degree)	2017		2018		2019		2020		2021	
	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees
Animal Sciences (B)	270	63	323	65	312	71	291	70	305	69
Animal Sciences (M, D)	35	6	30	9	21	12	31	4	36	3
Biological Sciences (B) College Park	1639	482	1700	401	1711	438	1729	428	1635	486
Biological Sciences (B) Shady Grove	62	8	59	20	65	26	87	16	84	26
Biological Sciences (M, D)	137	2	135	4	145	3	143	1	170	3
Entomology (M, D)	27	8	32	7	34	6	32	2	31	6
Master of Chemical and Life Sciences (M)	35	10	32	10	15	19	15	11	7	8
Master of Prof. Studies: Applied Entomology (M)	7	0	3	3	6	1	9	2	4	2
Cert. Prof. Studies: Beekeeping (PBC)	1	-	0	1	1	1	0	-	0	-
Cert. Prof. Studies: Integrated Pest Management (PBC)	0	-	0	-	0	-	0	-	2	-
Cert. Prof. Studies: Organic Sustainable Agriculture (PBC)	1	-	1	-	1	-	1	-	0	-
Life Science Postbaccalaureate Program (Note: Not a degree granting program.)	145	-	156	-	161	-	217	-	154	-
Behavior, Ecology, Evolution, and Systematics (M, D) – SUSPENSION PENDING	1	-	1	-	1	-	1	-	0	-
Biochemistry (B)	244	58	259	62	248	51	195	55	194	56
Chemistry (B)	153	27	148	40	135	31	142	37	140	44
Biochemistry (M, D)	34	7	39	7	44	3	42	13	36	3
Chemistry (M, D)	123	23	126	13	123	19	123	21	110	18
Environmental Science and Policy (B)	252	71	292	71	288	81	277	96	292	77
Music Professional (B)	109	21	120	28	127	22	123	33	129	24
Music – Liberal Arts (B)	25	5	17	14	21	6	26	8	32	5
Music Education (B)	52	5	64	12	77	7	61	15	60	10
Music Education (M, D)	197	34	195	67	202	51	193	66	202	42
Ethnomusicology (M, D)	12	3	9	6	9	2	10	1	10	2
Philosophy(B)	92	20	93	33	98	30	87	32	67	22
Philosophy, Politics and Economics (B)	N/A	-	N/A	-	6	-	70	-	195	4
Philosophy (M, D)	27	5	29	5	28	2	26	8	27	5

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.

2021-2022 Periodic Review of Academic Programs

Notes:

1. *Animal Sciences (BS, MS, PhD)*: The review team praised the strength of the undergraduate program, as well its diverse student body. The graduate program was viewed as strong, although GA stipends are low relative to comparable programs. Most of the recommendations made by the external team had to do with faculty hiring and with research infrastructure.
2. *Biological Sciences (BS, MS, PhD); Entomology (MS, PhD); Chemical and Life Sciences (MS); Master of Professional Studies: Applied Entomology; and Certificate of Professional Studies (three tracks in Beekeeping, Integrated Pest Management; and Organic Sustainable Agriculture)*: Three external unit review teams reviewed the academic units separately, but the programs are supported by all three units. The three departments – Biology, Cell Biology and Molecular Genetics, Entomology – support the above identified program were thus reviewed concurrently. Based on reviews, the chairs of the three academic units are working towards a model in which more departmental faculty are involved in the administration of the academic programs and to better coordinate allocation of teaching resources and TA lines. The departments agree that a comprehensive review of the graduate curriculum is due. The Entomology department is also engaging in a strategic planning process and is working towards strengthening its relationship with the College of Agriculture and Natural Resources in its Extension mission.
3. *Biochemistry (BS, MS, PhD); Chemistry (BS, MS, PhD)*: The external review team noted the outstanding undergraduate education provided by the department, as well as the diversity of the graduate student population and excellent facilities available to them. The new building underway is seen as an excellent opportunity to plan for a multi-year strategy for recruiting new faculty, as well as growing the research and scholarship portfolio of the department. The team suggested that the department consider adding a less math-intensive BA track to complement its BS undergraduate program, as has been a trend in other highly ranked programs. At the graduate level, the team noted differences in the two graduate programs (Chemistry and Biochemistry); suggested that alignment of the two programs around common course requirements would strengthen the programs; and suggested merging the two doctoral programs. The team also recommended some strengthening of policies for graduate student support.
4. *Environmental Science and Policy (BS)*: *ENSP* is a longstanding, disciplinary undergraduate program, with 11 tracks of study supported by three academic colleges and eight academic units. The program team has considered several initiatives for continuous improvement, for which they sought advice from the review team. These include the addition of environmental justice as a new concentration, enhancement of student research opportunities, increasing program visibility of the program, and continued implementation of its DEI plan. The review team recommended the creation of an Environmental Justice track.
5. *Music-Professional (BM); Music-Liberal Arts (BA); Music Education (M., MA); Ethnomusicology (MA); Music (MA); and Music (MM, MA)*: This review was an accreditation visit which is dictated by meeting the standards of accreditation. While the formal accreditation renewal process is still in progress, the review team had the perspective that all standards have been met at both the undergraduate and graduate levels. The team suggested more clarity in articulating the differences between the various degree programs at the graduate level and raised concerns that the number of tenure track faculty may be too low to support the range of programs, particularly given the need for faculty with specific expertise to support the various instrumental and voice ensembles.
6. *Philosophy (BA); Philosophy, Politics and Economics (BA); Philosophy (MA); Philosophy (PhD)*: The external review team made some minor recommendations to the undergraduate curriculum, having to do with sequencing and with enhancing the participation of other academic units in the new PPE major. They noted the strain on meeting general education delivery goals and on advising resources, due to limited finances. The team noted that graduate students are satisfied with their experience, although high teaching loads and low stipends have strained the competitiveness of the program relative to peers.

2021-2022 Periodic Review of Academic Programs

University of Maryland Eastern Shore										
Program Title (Degree)	2017		2018		2019		2020		2021	
	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees
Accounting (B)	67	16	49	15	42	15	37	15	44	4
Applied Computer Science (M)	17	4	14	4	10	5	6	3	6	8
Biology (B)	303	37	283	29	238	47	229	46	210	34
Business Administration (B)	115	27	95	27	91	20	122	21	127	19
Computer Science (B)	151	17	139	20	129	15	108	20	103	11
Construction Management Technology (B)	55	20	74	4	59	23	51	10	42	17
Criminal Justice (B)	330	66	291	74	246	76	193	68	158	56
Criminology & Criminal Justice (M)	12	1	11	3	16	2	13	3	8	9
Cybersecurity Engineering Technology (M)	14	0	19	3	24	6	24	6	20	13
Engineering Technology (B)	69	4	56	11	47	9	35	9	31	8
Environmental Science (B)	38	10	34	11	33	6	29	7	39	4
Finance (B)	15	8	17	5	15	4	12	8	18	7
General Agriculture (B)	50	9	58	9	72	9	70	11	63	15
General Studies (B)	117	9	142	18	134	13	120	10	66	6
History (B)	17	2	10	4	9	1	3	2	6	0
Human Ecology (B)	148	30	135	29	111	36	99	21	82	0
Marketing (B)	36	2	40	8	38	7	28	13	25	6
Pharmaceutical Sciences (M)	1	1	0	0	0	0	0	0	0	0
Pharmaceutical Sciences (D)	3	0	0	1	5	2	0	1	0	0
Sociology (B)	167	43	135	35	142	27	100	47	81	24
Notes:										
<p>1. <i>Accounting (BS), Business Administration (BS), Finance (BS) and Marketing (BS):</i> These programs were re-accredited by AACSB in 2021. The external review found the faculty to be highly qualified, engaged with their students, and are scholarly academics for AACSB purposes. Curriculum is current and relevant. The department is well connected with industry and community through its Industry Advisory Board and other activities. Recommendations included reviewing the Assurance of Learning plan, adding a required data analytics course, and working to reverse declining enrollments.</p>										

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.

2021-2022 Periodic Review of Academic Programs

2. *Applied Computer Science (MS) and Computer Science (BS)*: Both programs are operating and producing graduates but trends in enrollment are low and faculty workload is high, which has had an impact on course scheduling, student satisfaction, and faculty research output – the bedrock of a graduate program. Faculty size and morale are critical to the success and turn-around of the program. The department and administration are working to resolve faculty vacancies and address salary disparities. The program is investigating the ABET accreditation.
3. *Biology (BS)*: PPR found strong faculty scholarship and commitment to student support. Recommendations indicated develop a recruitment strategy to address low enrollments; developing a pre-health advising system; redeveloping the student learning assessment system; ensuring unified advising across the faculty; streamlining departmental committees; securing additional resources for faculty, facilities, and TAs; and developing infrastructure for student service-learning opportunities.
4. *Construction Management Technology (BS)*: *The program* is accredited by the American Council for Construction Education (ACCE). The ACCE's review indicated no program weaknesses, though five concerns were noted. These concerns relate to lack of consistent Program leadership, consistent distribution of professional development funding for Program faculty members, a need for greater involvement of the Industry Advisory Board with the Program, and implementation of new direct assessment tools for Student Learning Outcomes. The program was reaccredited for another a six-years through 2028.
5. *Criminal Justice BS*: The reviewer noted the Department does not have a practice of consistent program review, with the most recent one occurring in 2015. A key recommendation is restarting the Department's Assessment and Curriculum Committees to do the work of establishing and reviewing both Program Learning Outcomes (PLOs) and Student Learning Outcomes (SLOs) across courses. While the Academy of Criminal Justice Sciences (ACJS) no longer certifies programs, the department is encouraged to draw on those criteria and standards (e.g., including adding an ethics requirement) as part of their retooling efforts. Additionally, to increase enrollments, more courses should be online-ready to make the program more accessible to students, and to increase enrollment. The self-report describes the Department as needing instructional and research depth in the areas of criminal and civil law, institutional and community-based corrections, rural criminal justice studies, and the intersection between criminal justice mental health, and social work.
6. *Criminology and Social Justice (BS)*: The PPR identified several opportunities for continuous improvement. The first was revising the program's culminating experiences. The course-work option culminating experience requires too many credit hours, as it is shorter than the thesis option (by 6 credits) and thus places an undue obstacle for getting students through the program. Additionally, there is much overlap in the list of supportive courses that students can take to meet the concentration requirements; it is recommended that the concentrations be given greater distinctiveness by restricting the choice of courses used to meet the requirements. Marketing resource materials (i.e., program curriculum guide and website) need to be evaluated to remove outdated content.
7. *Cybersecurity Engineering Technology (MS)*: Although not yet accredited by ATMAE, the program is encouraged to develop and maintain those accreditation standards and to seek such accreditation once standards are met. The program is encouraged to consider the addition of new degree programs as a long-term goal, after program accreditation has been attained. It should explain the implementation of internships in the curriculum and the rubrics used; clarify the use of a 70% benchmark for direct assessments and expedite the implementation of the Continuous Improvement process to evaluate student learning objectives and use results to implement improvements in teaching practices. It was suggested to change the name of the degree to Master of Science in Applied Cybersecurity Engineering; the addition of "Applied" to the degree may highlight a more hands-on, career-oriented approach of the program and attract more professionals already working in the field. This, however, would need some curriculum adjustments and more focus on hands-on labs, both of which may require changes to the SSR.
8. *Engineering Technology (BS)*: The program is seeking to secure ABET accreditation. As such, the curriculum is being aligned with the ABET curriculum requirements and efforts are underway to address faculty size and the heavy reliance on adjunct faculty to deliver the program with the potential hiring of two tenure-track faculty positions in Electrical Engineering.

2021-2022 Periodic Review of Academic Programs

9. *Environmental Science (BS)*: The program is offered in classrooms and facilities appropriate to environmental science. The faculty is impressive, and funding is immense. Areas in need of further examination and review include better aligning the University mission statement and the Departmental mission statement; developing more measurable program goals and student learning outcomes; reviewing the 'prescriptive' curricula to reduce roadblocks to graduation; altering the sequence of beginning courses with Chemistry I and II moved to sophomore year and trigonometry as a prerequisite to Chemistry I; and improving retention rates.
10. *General Agriculture (BS)*: The PPR yielded several recommendations including developing a robust continuous assessment program for student learning which would allow continuous improvement of student learning and appointing an assessment coordinator; filling vacant positions and employing all possible mechanisms to attract qualified faculty to these positions; beginning discussion to move the program online to address declining enrollments; establishing an Advisory Committee and continue to strengthen the established recruitment and retention committee and widen the reach for student recruitment within and outside the State of Maryland; and completing renovations of research labs and classrooms.
11. *General Studies (BGS)*: The program has been a long-standing degree primarily used as a "placeholder" until students choose another academic major, as evidenced by the small number of graduates. By itself, the degree is intended to provide interdisciplinary opportunities with specific concentrations in all undergraduate majors at the university other than aviation science, business, education, math, music, and rehabilitation services. The degree needs rebranding and curriculum redesign. The recommendation was to convene a small task force to examine similar programs at other comparable sized schools and peer HBCUs, and to create tracks within the major for non-traditional, transfer and regular admit students
12. *History (BA)*: History is part of the general education curriculum and a vital part of the liberal arts foundation of the college degree. While the decline in history majors is partially attributable to the overall decline in the enrollment at the university, it is reflective of the national trend toward less interest in humanities disciplines. The lack of focused marketing of the major to high school students by the faculty, working in tandem with the Office of Admissions, can also be linked to the decline in majors. Additional marketing of the major and a curriculum redesign is expected to increase the number of majors by 10% over the next five years. Priorities and action steps with a timeline will be developed for an improvement plan.
13. *Human Ecology (BS)*: The PPR identified numerous strength including incorporating several new courses reflecting current trends in preparing students for careers; implementing recommendations from the American Association of Family and Consumer Sciences Accreditation report; develop a comprehensive Student Learning Outcomes Assessment Plan; having robust scholarly research, publications, and grant funding by the faculty; and supporting student in the form of one-to-one advising and the student handbook. A recommendation was to involve alumni, community entities, and field professionals to assist in program assessment and planning.
14. *Pharmaceutical Sciences (MS, PhD)*: Increasing enrollments is a high priority. Scholarships for the master's students started in fall, 2022 and UMES has developed a new strategy to market its program via social media platforms and a university sponsored private sector initiative. The faculty collaborated with University of Pittsburgh, submitted a NIMH/NIH U24 grant entitled "The BRAIN-STORRM Network for production and distribution of cell type specific AAVs ". In this project, UMES is expected to have 4-6 Master's degree students participating in this research. After training, the students will be ready for jobs in biotech as well as pharmaceutical companies. The grant was reviewed in October 2022 with the goal of funding in April 2023.
15. *Sociology (BA)*: Sociology is one of the largest undergraduate majors on the campus. The review noted that the department has experienced significant turnover in leadership and that the current number of full-time faculty is inadequate for the major as the full-time faculty to student ratio is 1:40. The core curriculum and established electives are diverse and well-rounded, but the program would benefit from a documented rotation of courses to help students plan their studies. More courses need to be developed for online delivery, and the rotation of classes taught in the online format should also be documented for students. The department has not been performing regular internal or external program evaluations. The Department is encouraged to do a comprehensive review of the course catalog to examine course descriptions and offerings, to eliminate courses no longer taught and/or to hire people to fill the gaps and to expand course offerings. Faculty should review course syllabi to begin creating and mapping out course learning objectives (CLOs) to the program learning objectives (PLOs).

2021-2022 Periodic Review of Academic Programs

University of Maryland Global Campus										
Program Title (Degree)	2017		2018		2019		2020		2021	
	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees
Accounting & Financial Mgmt. (M)	452	87	510	67	422	84	366	107	314	97
Biotechnology (M)	1458	393	1375	375	1214	396	1126	378	1021	333
Business Administration (M)	2716	982	2627	1420	2505	1368	2314	1232	1848	1360
Criminal Justice (B)	1957	307	1956	330	1757	327	1870	321	1790	367
English (B)	529	88	546	88	500	89	532	105	484	114
Gerontology and Aging Services (B)	98	8	103	11	80	15	84	21	67	15
Graphic Communication (B)	336	31	351	51	347	57	400	52	389	63
Information Technology (M)	1458	393	1375	375	1214	396	1126	378	1021	333
Political Science (B)	538	69	535	80	472	85	535	99	461	100

Notes:

- Accounting and Finance (MS)*: Analysis indicated that this program is strong, and students are satisfied with the learning and experience they receive. Recommendations included updating program learning goals to ensure currency and relevancy and carry out appropriate course content updates; determining if more project learning (rather than paper-based assessments) would be beneficial; improving student learning by ensuring that students are assigned the most appropriate learning resources for their classes (not limiting them to OERs); proposing a new PBC within the MSAF program; and developing a new course focused on FINTECH and Decision Making.
- Biotechnology (MS)*: Review identified several strengths including dedicated faculty, a strong curriculum, and robust administrative support. Reviewers suggested the program could benefit from strengthening content in each AOC by including more courses designed for industry and program specialty needs; adding additional content and course sequences to increase specialized knowledge and skills; using a dedicated instructional designer to quickly create and offer the necessary courses to build out the program; and investigating additional on ramps and pathways into the Master’s program, including opportunities for accelerated degrees, such as a 4 + 1 offering.
- Business Administration (MBA)*: The MBA program is accredited by the International Accreditation Council for Business Education (IACBE). The IACBE review team recognized the MBA program for its ability to fully integrate faculty irrespective of their location; its innovation in the implementation and use of the Program Scorecard, and the overall excellence in delivering online education. Recommendations included reviewing title/description/content relationship in MBA 630 to ensure consistent messaging and focus; developing a strategic plan for the MBA program to ensure the program’s competitiveness and relevancy in the current competitive environment; and establishing an industry advisory board to provide strategic advice to program directors and faculty.

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.

2021-2022 Periodic Review of Academic Programs

4. *Criminal Justice (BS)*: The review showed that greatest strength of the program is the faculty who teach the required core and upper-level electives, as they possess notable academic credentials and significant, relevant, criminal justice industry experience. The primary opportunities for improvement include streamlining program core courses and the incorporation of more industry-relevant content in all program core courses and upper-level electives. In addition, new curriculum mapping and long-term outcomes assessment plans will allow for annual and continuous outcomes assessment and quality control.
5. *English (BA)*: The program's strengths lie in its curriculum as the development of new courses, revision of existing courses, and changes in requirements have been successfully implemented over the past two years. Planned changes, as a result of the analysis, include increasing pipelines and pathways for students to enter and exit the program with ample career and academic opportunities including expanding portfolio of offerings; establishing workflow between UMGc Advising and English Program to foster a sense of community and allow the faculty to identify students who would be good candidates for the MAT program; and developing high academic quality course content and activities with relevancy of new course topic additions in women's and contemporary global literatures.
6. *Gerontology and Aging Services (MS)*: The reviewer identified several strengths including a dedicated program director, academic program coordinator and faculty; the interdisciplinary curriculum that prepares students for a broad range of opportunities within aging service; and high student satisfaction. Recommendations for improvement related to student retention and assessing learning quality; reviewing and updating the course sequence to align with course learning outcomes, program outcomes, and aligning with the Academy for Gerontology in Higher Education Gerontology competencies. This might allow for additional national visibility opportunities to build partnership with employers.
7. *Graphic Communication (BA)*: Recommendations included hiring a Collegiate Faculty Member in Art History, solidifying the program curriculum through required related courses; developing separate pathways for non-design degree students vs. design degree students; continue to update course content, assignments and engage in new course development; and develop a certificate in visual communications.
8. *Information Technology (MS)*: The School of Cybersecurity & Information Technology has identified five goals which align with the recommendations of the review. One of the goals is to refresh the content in selected courses within the M.S. IT program, and the remaining goals are to consider the viability of creating separate M.S. programs from selected specializations. Each goal has a suggested due date, and clearly identified deliverables. In addition, work is underway to improve student retention.
9. *Political Science (BS)*: The review team found that the highly qualified faculty who teach in this program to be a great strength. Recommendations included conducting a comprehensive review of political science courses and sequence, considering cross-offering courses to enrich political science program and address potential political science gaps; conducting a comprehensive review of current course materials; building relationships with local agencies including identifying government direct-contact information for enriched career resources; and developing internal program tracks and additional certificates to meet student needs.



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

TOPIC: Report on the Instructional Workload of the USM Faculty - (AY 2021-2022)

COMMITTEE: Education Policy and Student Life

DATE OF COMMITTEE MEETING: Tuesday, January 10, 2023

SUMMARY: At this meeting, the Committee will review the annual report on the workload of the USM faculty. This year’s report (AY 2021-2022) is the fourth of a multi-year transition between reports generated under the earlier policy and reports that will reflect the format of the new policy which was passed by the Board of Regents in June 2019.

As in the past, the report summarizes faculty workload, which includes teaching, research, and service activities at all USM degree-granting institutions with tenured or tenure-track faculty. Key findings include:

- Despite the extraordinary circumstances that faculty and students endured during the global pandemic, total credit hours produced in 2020-21 kept pace with total student headcount enrollment.
- Full-time tenured/tenure track and full-time, non-tenure track instructional faculty accounted for 69.15% of all credit hours produced (down slightly from the previous year).
- Over the five years since 2016-17, credit hours produced by part-time faculty dropped by -0.96%.
- Four-year undergraduate graduation rates improved again in 2021-22 to the best performance since this measure was first tracked. Six-year graduation stayed steady.
- Faculty secured over \$1.57 billion in research funding, representing a 1.78% decrease over the previous year.
- Average student credit hour production for core instructional faculty was down somewhat from 2020-21, but on par with 5-year averages.

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: January 10, 2023

BOARD ACTION:

DATE:

SUBMITTED BY: Joann A. Boughman 301-445-1992

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OFFICE OF THE CHANCELLOR

December 18, 2022

The Honorable Guy Guzzone
Chair, Senate Budget & Taxation Committee
3 West Miller Senate Office Building
Annapolis, MD 21401

The Honorable Ben Barnes
Chair, House Appropriations Committee
121 House Office Building
Annapolis, MD 21401

RE: Fiscal 2023 Joint Chair’s Report – Report on Faculty Workload (R75T0001), Pages 201

Dear Chair Guzzone and Chair Barnes:

Language in R75T0001 on page 201 of the Fiscal 2023 Joint Chair’s Report requires that the University System of Maryland Office to report on instructional faculty workload:

The committees request that the University System of Maryland (USM), Morgan State University (MSU), and St. Mary’s College of Maryland (SMCM) continue to provide annual instructional workload reports for tenured/tenure-track faculty. By focusing on these faculty, the committees gain a sense of the teaching activities for the regular core faculty. However, there are other types of instructional faculty at institutions such as full- and part-time nontenured/nontenure-track faculty, including adjunct faculty, instructors, and lecturers. Focusing on only tenured/tenure-track faculty provides an incomplete picture of how students are taught. Therefore, the report should also include the instructional workload when all types of faculty are considered. Additional information may be included at the institution’s discretion. Furthermore, the USM report should include the percent of faculty meeting or exceeding teaching standards for tenured/tenure-track faculty for the University of Maryland, Baltimore Campus.

Attached is the AY 2021-2022 Report of the Workload of the USM Faculty, the 4th year of our transition to the University System of Maryland’s new workload reporting format under the Board of Regents’ June 2019 policy amendment aimed at improving reporting accuracy and coverage, better aligning with current practice, and incentivizing policy goals around student success.

I am happy to address any questions you may have regarding this response.

Sincerely,

Jay A. Perman
Chancellor

Enclosures

cc: Sarah Albert, DLS; Sara J. Baker, DLS; Ryan Wilkens, DBM; Joann Boughman, USM; Ellen Herbst, USM; Patrick Hogan, USM; Sophia Kasdan, USM; Zakiya Lee, USM

REPORT ON THE INSTRUCTIONAL WORKLOAD OF THE USM FACULTY

ACADEMIC YEAR 2021-2022



As requested on Page 201 of the FY23 Joint Chair's Report

Submitted by:

Office of the Senior Vice Chancellor for Academic and Student Affairs

KEY FINDINGS

- Despite the extraordinary circumstances that faculty and students endured during the global pandemic, total credit hours produced in 2020-21 kept pace with total student headcount enrollment (see Table 3).
- When disaggregated by level of the courses taught (lower- and upper-division, undergraduate and graduate), total credit hours produced appropriately mirrored the unique mission of the USM institutions (see Table 4).
- Full-time tenured/tenure track and full-time, non-tenure track instructional faculty accounted for 69.15% of all credit hours produced (down slightly from the previous year).
- Further, over the five years since 2016-17, credit hours produced by part-time faculty dropped by -0.96% (see Table 5).
- Full-time tenured/tenure-track faculty carried the largest load at the upper-division undergraduate and graduate levels as compared to all other faculty types (see Table 6).
- Average student credit hour production for core instructional faculty was down somewhat from 2020-21 (See Table 7), but on par with 5-year averages.
- The number of bachelor's degrees awarded continued to increase in 2021-22. Across the institutions reported here there was a USM record 27,989 bachelor's degrees awarded (see Table 8).
- Four-year undergraduate graduation rates improved again in 2021-22 to the best performance since this measure was first tracked (see Table 9). Six-year graduation stayed steady (see Table 10).
- Faculty publication and scholarship continued at high levels (see Table 11) and at appropriate levels according to faculty type (Table 12).
- Faculty secured over \$1.57 billion in research funding, representing a 1.78% decrease over the previous year (Table 13).

INTRODUCTION

Since 1994 the University System of Maryland (USM) Board of Regents has provided an annual report to the General Assembly that synthesizes faculty workload, with a major emphasis on instructional activities. This report provides summary data on faculty activity at USM degree-granting institutions for the academic year 2021-2022.

Background

The USM policies governing faculty workload are designed to ensure maximum accountability, while providing individual campuses high levels of flexibility to deploy faculty in the most effective and efficient way possible. The primary USM Board of Regents policy governing faculty workload is II-1.25 POLICY ON FACULTY WORKLOAD AND RESPONSIBILITIES.¹

The main purpose of this policy is to promote optimal performance by the USM institutions in meeting the needs and expectations of its students and other stakeholders and to provide mechanisms that will ensure public accountability for that performance, particularly as it relates to faculty work. However, since this policy was initially developed in 1994, the nature of faculty work related to instruction has evolved to include much more than just classroom teaching. As a result, the "course unit" metric reported previously was requiring an increasing number of

¹ Other policies that clarify specific issues or relate to the faculty workload include: II-1.19 UNIVERSITY OF MARYLAND SYSTEM POLICY ON THE COMPREHENSIVE REVIEW OF TENURED FACULTY and II-1.05 POLICY ON THE EMPLOYMENT OF FULL-TIME, NON-TENURE TRACK INSTRUCTIONAL FACULTY IN THE UNIVERSITY SYSTEM OF MARYLAND.

exemptions and workarounds to establish equivalencies with the various academic innovations our institutions are embracing. This policy, therefore, was amended in June 2019 to improve reporting accuracy and coverage, align with current practice, and incentivize policy goals around student success by eliminating the course unit metric and rely, instead, on credit hours to measure teaching productivity.

This year's report continues the transition between reports generated under the earlier policy and reports that will reflect the format of the new policy. While UMCES and UMB will not be included until next year, this report adds back previously exempted departments/colleges for Salisbury University, Towson University, and University of Baltimore and more fully incorporates data from UMGC, which only began reporting for the first time last year.

As described, below, we have also made some definitional shifts in this report over the last 3 years:

- Numbers of faculty provided are based on *headcounts* instead of *full-time equivalents* (FTEs).
- Data for department chairs and non-departmental administrators who are also full-time faculty are included in the full-time faculty categories instead of being included as part of "other faculty."
- Data for full-time research faculty and teaching/graduate assistants are disaggregated into their own categories instead of being included as part of the previous "other faculty" category.
- Previously exempted departments/colleges for Salisbury University, Towson University, and University of Baltimore have been added back into calculations across years for consistency and comparison purposes.

While these definitional shifts will make some longitudinal comparisons a little more difficult over the next 5 years, we believe these changes are providing a clearer picture of how faculty are being deployed across teaching, research, and service in the analyses. The addition of student credit hour data disaggregated by course level should also help make clearer how faculty are being deployed across undergraduate and graduate programs. In addition, these changes put the definitions being used for purposes of this report into better alignment with COMAR and MHEC data definitions for various submissions, including the Employee Data System (EDS) report.

Definitions

For analysis purposes, this report combines various faculty activities and different faculty types into relatively broad categories. The metrics for these activities and the types of faculty are defined below:

Student Credit Hours (SCH): Student credit hours are calculated as the number of students in the course at enrollment freeze (EIS) multiplied by the number of course credit hours, as measured in accordance with COMAR 13B.02.02.16(D). For example, a 3-credit course with ten students produces thirty student credit hours. Similarly, for a variable credit course where 10 students are enrolled at 2 credits and 10 other students are enrolled at 3 credits, the student credit hours generated would be 50 credits.

Academic Year: All data reported are for fall and spring terms only.

Faculty Types: Numbers of faculty included here represent headcounts and are disaggregated by their employment classification, as described below:

Full-time Tenured/Tenure-Track Faculty: This includes all persons, including department chairs and non-departmental administrators, holding tenured and tenure-track positions who are classified as faculty and had at least 1 instructional credit hour in the reporting year.

Full-time Non-Tenure Track Instructional Faculty: These are all full-time instructional faculty who are not on the tenure track with at least 1 instructional credit hour in the reporting year. Full-time visiting instructional faculty are also reported here.

Full-time Non-Tenure Track Research Faculty: This includes all full-time research faculty who are not on the tenure track with at least 1 instructional credit hour in the reporting year. Full-time visiting research faculty are also reported here.

Teaching/Graduate Assistant: These are graduate students with at least 1 instructional credit hour in the reporting year as part of their university employment.

Part-Time Instructional Staff: This category includes emeritus, adjunct and affiliated faculty, staff who teach, and all other part-time faculty with at least 1 instructional credit hour in the reporting year. Teaching/ graduate assistants are not reported here.

Course Levels: Per the USM's Policy for the Numbering of Academic Courses III-6.10, course levels are defined here as follows:

Lower Division: Undergraduate credit hours for 000-099 non-degree courses and 100 and 200 level courses.

Upper Division: Undergraduate credit hours for undergraduate courses 300 level courses and higher.

Graduate I: Graduate credit hours for post-baccalaureate certificate, master's and professional practice doctoral level courses

Graduate II: Graduate credit hours for post-master's and research/scholarship doctoral level courses.

Graduate III: Graduate credit hours for master's and doctoral research supervision courses (798, 799, 898, 899).

USM FACULTY PROFILE

In 2021-2022, the USM had a total instructional complement of 18,010 faculty by headcount across all institutions except UMCES. Table 1 provides a detailed breakdown of these faculty by tenure status and full or part time employment status for the institutions represented in this year's report.

Table 1. USM Faculty Profile (Academic Year 2021-2022)

	FT Tenured/ Tenure Track	Full Time Non-Tenure Track Instructional	FT Non-TT Research	Teaching/ Graduate Assistants	Other PT Instructional Staff	All Faculty
BSU	176	46	0	0	391	613
CSU	85	38	0	0	99	222
FSU	198	43	0	6	155	402
SU	343	89	0	24	264	720
TU	592	313	0	24	971	1900
UB	140.00	30.00	0.00	3.00	222.00	395.00
UMB	465	1122	357	37	1918	3899
UMBC	385	159	11	32	644	1231
UMCP	1,362	550	120	432	1,528	3,992
UMES	151	48	2	35	133	369
UMGC	0	185	0	0	4082	4267
Overall	3,897	2,623	490	593	10,407	18,010

Source: USM Report on Faculty Teaching Workload
 *NOTE: TOTAL DOES NOT INCLUDE UMCES.

MEASURES OF FACUTLY CONTRIBUTIONS TO STUDENT SUCCESS

Because student success is the central focus of our degree-granting institutions, the primary measure of instructional productivity in this report is expressed in terms of credit hours produced. Additional student outcomes with respect to enrollments and graduation rates are also presented here as a measure of the faculty's contributions to student success.

Student Credit Hour Measures

Production of student credit hours (SCH) is the prescribed measure in the revised policy on faculty workload for evaluating instructional activity and deployment of faculty. SCH are calculated as the number of students in the course at enrollment freeze (EIS) multiplied by the number of course credit hours, as measured in accordance with COMAR 13B.02.02.16(D) and further defined above.

Total SCH Production by Institution

The total SCH production by institution over the last 5 academic years is reported in Table 2, below. These SCH totals include all faculty types and instructional levels. The number and percent of 1-year change and the 5-year change are also reported.

Table 2. One-year and 5-year change in total SCH produced.

	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	1-yr change (2021-22 vs. 2020-21)		5-yr change (2021-22 vs. 2016-17)	
							#	%	#	%
BSU	130,328	141,908	142,389	149,722	147,901	150,435	2,534	1.71%	20,107	15.43%
CSU	73,302	72,329	72,014	65,674	65,192	46,168	-19,024	-29.18%	-27,134	-37.02%
FSU	121,206	121,392	112,865	117,702	107,662	97,271	-10,391	-9.65%	-23,935	-19.75%
SU	222,151	226,494	223,402	227,458	212,474	194,907	-17,567	-8.27%	-27,244	-12.26%
TU	534,520	536,584	542,978	551,865	526,026	495,783	-30,243	-5.75%	-38,737	-7.25%
UB	108,029	100,387	89,689	78,698	73,396	64,500	-8,897	-12.12%	-43,530	-40.29%
UMBC	322,225	317,416	321,734	320,027	314,074	313,637	-437	-0.14%	-8,588	-2.67%
UMCP	895,625	887,875	889,605	962,924	969,969	964,737	-5,232	-0.54%	69,112	7.72%
UMES	103,346	93,939	83,779	75,792	67,229	61,739	-5,491	-8.17%	-41,608	-40.26%
UMGC	772,224	789,320	786,602	771,941	802,652	764,406	-38,246	-4.76%	-7,818	-1.01%
Total*	3,282,956	3,287,644	3,265,057	3,321,802	3,286,575	3,153,582	-132,993	-4.05%	-129,374	-3.94%

Source: USM Report on Faculty Teaching Workload
 *Note that total does not include UMB or UMCES.

Table 3, below, illustrates whether the total SCH produced by the institution is keeping pace with total enrollment. Over the last year, there was a drop in USM fall headcount enrollment (-3.13%) and a roughly equivalent drop in overall USM SCH production (-4.05%). Over 5 years, enrollments are down overall (-4.15%) and total SCH generated has also decreased (-3.94%).

Table 3. One-year and 5-year change in fall headcount enrollment and total SCH produced.

	1-yr change (2021-22 vs. 2020-21)		5-yr change (2021-22 vs. 2016-17)	
	Enrollment	Total SCH	Enrollment	Total SCH
BSU	0.93%	1.71%	11.27%	15.43%
CSU	-10.52%	-29.18%	-28.51%	-37.02%
FSU	-8.40%	-9.65%	-21.62%	-19.75%
SU	-6.84%	-8.27%	-13.49%	-12.26%
TU	-4.84%	-5.75%	-6.66%	-7.25%
UB	-11.03%	-12.12%	-38.01%	-40.29%
UMBC	1.04%	-0.14%	-0.01%	-2.67%
UMCP	1.38%	-0.54%	5.60%	7.72%
UMES	-9.90%	-8.17%	-38.93%	-40.26%
UMGC	-5.47%	-4.76%	-3.83%	-1.01%
Total*	-3.13%	-4.05%	-4.15%	-3.94%

Sources: USM Report on Faculty Teaching Workload and USM Institutional Research Information System (IRIS)
 *Note that total does not include UMB or UMCES.

Beginning in 2019-20, USM institutions began also providing a breakdown of SCH disaggregated by the program and degree level of the courses taught. Table 4 provides the 2021-22 SCH data by course level. Variations illustrate the unique missions of each of the USM institutions.

Table 4. 2021-22 SCH production by course level.

	BSU	CSU	FSU	SU	TU	UB	UMBC	UMCP	UMES	UMGC	USM
Lower-Division	87,507	24,242	42,512	100,307	237,835	9,508	145,572	414,465	33,648	338,566	1,434,161
Upper-Division	49,253	18,395	43,864	81,552	20,996	20,518	129,667	405,602	14,233	322,200	1,306,279
Graduate I	7,433	3,531	9,951	12,403	33,198	33,516	26,934	92,450	9,502	102,288	331,205
Graduate II	5,872	-	753	645	2,907	664	4,118	31,413	3,919	975	51,266
Graduate III	370	-	191	-	847	294	7,346	20,807	438	377	30,670
Total	150,435	46,168	97,271	194,907	495,783	64,500	313,637	964,737	61,739	764,406	3,153,582

Source: USM Report on Faculty Teaching Workload

*Note that total does not include UMB or UMCES.

Student Credit Hour Production by Faculty Type

Table 5, below, illustrates the degree to which different types of faculty are responsible for the production of SCH. This year for the first time, Table 5 includes data from UMGC, where part-time faculty account for over 94% of SCH production. For comparison purposes with previous years' reports, totals are reported both with UMGC data and without.

Including UMGC, core instructional faculty (tenured/tenure-track and full-time, non-tenure track instructional faculty) account for 53.77% of all SCH produced and the percentage of SCH produced by teaching/graduate assistants and other part-time faculty is 44.79%.

When UMGC is removed from the totals, the percentage of SCH accounted for by core instructional faculty is 69.15% (down slightly over last year's 69.45%) and SCH produced by teaching/graduate assistants and other part-time faculty is 28.95% (down from last year's 29.91%).

Table 5. Percentage of SCH produced by faculty type.

	FT Tenured/Tenure Track		Full-time Non-Tenure Track Instructional		FT non-TT Research		Teaching/Graduate Assistants		Other PT Instructional Staff	
	% of total 2016-17	% of total 2021-22	% of total 2016-17	% of total 2021-22	% of total 2016-17	% of total 2021-22	% of total 2016-17	% of total 2021-22	% of total 2016-17	% of total 2021-22
BSU	42.07%	43.23%	16.40%	0.00%	0.00%	0.00%	0.00%	0.00%	41.57%	42.69%
CSU	62.86%	57.37%	2.68%	13.13%	0.00%	0.00%	0.00%	0.00%	34.46%	29.50%
FSU	63.60%	65.46%	14.11%	15.80%	0.00%	0.00%	0.34%	0.09%	21.95%	18.64%
SU	60.31%	61.82%	18.56%	19.86%	0.00%	0.00%	0.72%	1.15%	20.41%	17.17%
TU	41.36%	39.16%	26.95%	29.91%	0.00%	0.00%	0.82%	0.47%	30.87%	30.45%
UB	48.19%	63.20%	13.33%	12.78%	0.11%	0.00%	0.41%	0.65%	37.96%	23.37%
UMBC	34.36%	27.80%	31.42%	32.22%	0.13%	0.36%	3.58%	1.98%	30.51%	37.64%
UMCP	39.97%	32.62%	24.23%	39.35%	0.49%	2.37%	6.11%	5.74%	29.20%	19.93%
UMES	47.30%	47.46%	25.56%	20.95%	0.25%	0.62%	1.53%	1.30%	25.36%	29.67%
UMGC	--	0.00%	--	5.69%	--	0.00%	--	0.00%	--	94.31%
Tot w/UMGC	43.92%	29.86%	23.29%	23.90%	0.21%	0.77%	2.97%	2.14%	29.61%	42.65%
Tot w/o UMGC	43.92%	39.42%	23.29%	29.73%	0.21%	1.02%	2.97%	2.82%	29.61%	26.12%

Source: USM Report on Faculty Teaching Workload

*Note that total does not include UMB or UMCES.

Table 6, below, illustrates how faculty types are being deployed across undergraduate and graduate programs. Here again, totals are presented both with UMGC data and without, for comparison purposes to previous reports.

As expected, full-time tenured/tenure-track faculty carry the largest load at the graduate level as compared to other faculty types. Of note, the institutions appropriately make heavy use of part-time faculty (usually also practitioners in the field) at the Graduate I Level, which are typically master’s and professional practice courses.

Table 6. Course Levels of Total SCH Produced by Faculty Type.

	FT Tenured/TT	FT non-TT Instructional	FT non-TT Research	Teaching/Graduate Assistants	Other PT Instructional Staff	Total
Faculty Headcount	3,432	1,501	133	556	8,489	14,111
Lower-Division	326,481	441,233	10,052	47,878	608,519	1,434,161
Upper-Division	444,418	280,322	10,665	18,392	552,482	1,306,279
Graduate I	106,886	48,926	3,040	1,127	171,227	331,205
Graduate II	37,150	4,180	498	49	9,389	51,266
Graduate III	26,843	289	128	-	3,410	30,670
Total w/UMGC	941,778	774,949	24,383	67,445	1,345,027	3,153,582
Total w/o UMG	941,778	774,949	24,383	67,445	624,110	2,389,176

Source: USM Report on Faculty Teaching Workload

*Note that totals do not include UMB or UMCES.

Average Student Credit Hour Production for Core Instructional Faculty

Table 7 indicates that USM average SCH produced by FT core instructional faculty decreased in 2021-22 from the previous year with core instructional faculty at all institutions reported here producing fewer SCH as compared to 2020-21. That said, overall average SCH production is on par with the five-year period since 2016-17.

Table 7. Trends in Average SCH Generated by FT Core Instructional Faculty

	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
BSU	353	387	314	314	311	293
CSU	391	398	340	340	373	265
FSU	381	376	388	388	374	328
SU	413	404	407	407	391	368
TU	405	403	412	412	396	378
UB	344	336	294	294	306	288
UMBC	365	367	358	358	358	346
UMCP	311	328	359	359	374	363
UMES	349	308	264	264	221	212
UMGC	--	--	--	--	275	235
USM Average	340	344	351	366	362	344

Sources: USM Report on Faculty Teaching Workload and USM Institutional Research Information System (IRIS)

* Note that totals do not include UMB or UMCES.

Instructional Workload at the University of Maryland, Baltimore

The Maryland General Assembly requires the USM to include information regarding the workload of the University of Maryland, Baltimore in the faculty workload report. Until the recent shifts in USM policy, UMB has applied a different set of standards for judging faculty instructional workload that were more appropriate for its professional schools. Starting with next year’s report, UMB will be integrated into the above analyses to the extent possible.

For 2021-22, UMB reports that 94% of all core faculty met or exceeded the institution’s standard faculty instructional workload, consistent with the attainment for previous years. In fact, nearly half of faculty exempted from teaching the standard load taught anyway to pursue externally funded or department supported research and service.

Student Outcomes

While SCH are one measure of faculty production, student outcomes --such as number of degrees awarded and graduation rates-- are also indicators of faculty contributions to student success. While an increase or decrease in the number of degree recipients can reflect a number of factors such as the institution’s growth in enrollment and

their level of success in retaining students to graduation, students' ability to graduate in a timely fashion is also dependent on the quality of faculty advising and the appropriateness of course offerings.

Table 8. Five-year trends in undergraduate degrees awarded by institution.

	2017	2018	2019	2020	2021	2022
BSU	713	781	826	870	881	850
CSU	421	399	378	335	332	329
FSU	1,060	1,027	1,078	967	1,023	928
SU	2,026	1,873	1,805	1,907	1,842	1,664
TU	4,628	4,609	4,619	4,701	4,628	4,529
UB	755	711	615	521	468	391
UMBC	2,572	2,578	2,658	2,632	2,643	2,674
UMCP	7,292	7,559	7,768	8,295	8,100	8,420
UMES	514	482	508	516	384	300
UMGC	5883	6206	6346	6663	7,638	7,904
Overall	25,864	26,225	26,601	27,407	27,939	27,989

Source: USM Institutional Research Information System (IRIS)

*Note total does not include UMB or UMCES.

As seen in Table 8, above, the number of graduating students continues to rise and is at the highest level yet achieved by the USM. USM also continues to see overall progress in student time-to-degree. Table 9, below, illustrates four-year graduation rates and Table 10 documents changes in the six-year graduation rates. Although graduation rates reflect only part of the larger picture, they are a useful measure of student success.

Table 9. Four-year undergraduate graduation rate by entering year.

	2013	2014	2015	2016	2017	2018
BSU	16%	17%	18%	18%	15%	17%
CSU	12%	12%	12%	9%	9%	11%
FSU	27%	27%	27%	31%	34%	31%
SU	52%	49%	49%	50%	48%	49%
TU	45%	47%	49%	47%	45%	46%
UB	17%	18%	22%	20%	23%	22%
UMBC	39%	42%	43%	45%	46%	45%
UMCP	66%	65%	69%	70%	71%	73%
UMES	21%	21%	15%	20%	19%	18%
UMGC	3%	4%	5%	6%	6%	6%
Total	46%	47%	48%	49%	50%	53%

Source: USM Institutional Research Information System (IRIS)

*Note: Does not include UMB or UMCES. Percentages reflect graduation anywhere in USM for all first-time full-time freshmen.

Table 10. Six-year undergraduate graduation rate by entering year.

	2011	2012	2013	2014	2015	2016
BSU	42%	46%	46%	46%	44%	42%
CSU	23%	21%	25%	31%	25%	23%
FSU	56%	57%	57%	59%	55%	55%
SU	76%	71%	74%	70%	74%	70%
TU	74%	75%	72%	75%	75%	74%
UB	34%	41%	44%	40%	42%	36%
UMBC	65%	68%	71%	72%	73%	72%
UMCP	85%	86%	87%	87%	88%	88%
UMES	42%	44%	46%	45%	37%	40%
UMGC	11%	15%	17%	13%	13%	11%
Total*	70%	70%	72%	72%	71%	71%

Source: USM Institutional Research Information System (IRIS)

*Note: Does not include UMB or UMCES. Percentages reflect graduation anywhere in USM for all first-time full-time freshmen.

MEASURES OF FACULTY CONTRIBUTIONS TO THEIR DISCIPLINES AND SERVICE

Scholarship and Service Activity

Table 11 is a summary of the scholarship and service activity of the USM faculty from the reporting institutions (including UMB). During the 2021-22 academic year, USM faculty published 554 books and 16,457 peer-reviewed articles. Faculty also participated in 4,462 juried and non-juried creative activities combined. Despite the continued presence of challenges due to COVID-19, USM faculty logged 45,340 days in public service to their communities, government, schools, and non-profit organizations. The numbers of peer-reviewed articles, participation in juried and non-juried creative activities, and the number of days in public service are all increases over last year. Table 12 below, provides these same data disaggregated by faculty type (without UMB).

Table 11. Scholarship and service of the USM faculty.

	# Books Published	# Refereed Publications	# Non-Refereed Publications	# Juried Creative Works	# Non-Juried Creative Works	# Professional Presentations	# Prestigious Faculty Awards	# Faculty Awarded Externally Funded Grants and Contracts	Total Dollars Awarded from Externally Funded Grants and Contracts (FY21)	# Patents Awarded to Faculty	# Faculty in Leadership Positions in Professional Societies	# Days Spent in Public Service
Comprehensive												
BSU	26	150	69	12	32	436	46	37	\$26,044,683	4	74	4,228
CSU	2	25	6	10	0	46	5	27	\$19,046,560	0	14	581
FSU	8	77	57	1	175	119	6	20	\$7,960,944	0	8	1,588
SU	11	185	70	54	124	173	17	28	\$8,307,089	0	129	1,809
TU	58	674	216	547	454	617	51	92	\$15,385,281	0	240	6,359
UB	10	75	29	16	3	204	16	36	\$19,361,183	0	43	513
UMES	22	130	51	28	47	307	31	102	\$18,399,159	3	111	2,079
Research												
UMB	286	6,299	739	--	2,177	4,133	521	819	\$604,358,538	--	--	17,822
UMBC	24	887	173	43	184	1,095	57	206	\$99,405,901	4	304	2,424
UMCP	107	7,955	721	80	475	287	205	908	\$673,615,145	105	154	7,937
UMGC	5	14	19	7	42	115	10	1	\$50,783,587	0	16	1,147
Overall	554	16,457	2,131	791	3,671	7,417	955	2,275	\$1,491,884,484	116	1,077	45,340

Source: USM Institutional Research Information System (IRIS)

*Note: Does not include UMCES.

Table 12. Measures of Research and Scholarly/Creative Productivity by Faculty Type

	FT Tenured/TT	FT non-TT Instructional	FT non-TT Research	Other	Total
# Books Published	227	34	5	7	273
# Refereed Publications	8,392	243	1,335	202	10,172
# Non-refereed Publications	1,194	113	48	56	1,411
# Juried Creative Works	598	168	16	16	798
# Non-juried Creative Works	1,023	381	61	71	1,536
# Professional Presentations	2,882	432	29	56	3,399
# Prestigious Faculty Awards	360	59	10	15	444
# Faculty Awarded Externally Funded Grants and Contracts	980	84	148	245	1,457
# Patents Awarded to Faculty	96	2	7	11	116
# Faculty in Leadership Positions in Professional Societies	914	151	6	22	1,093
# Days spent in public service	19,476	7,900	386	903	28,665

Source: USM Report on Faculty Teaching Workload

*Note: Does not include UMB or UMCES.

External Funding

Securing external funding for research and other activities is an important aspect of faculty work and is often seen as a proxy measure for research productivity. It is also used as a criterion for ranking institutions nationally, supports the creation and transfer of new technologies, contributes to the economic development of critical areas in Maryland, provides community services to underserved populations, feeds into the creation of new curriculum and course development and, most importantly, assures that students receive their instruction from faculty members who are recognized as being at the cutting edge of their disciplines. Although USM faculty are primarily responsible for their campus' external funding levels, not all external funding is attributable to tenured/tenure-track faculty. Staff and other research faculty also attract external dollars.

Table 13 records the level of external funding received by USM institutions, as reported by each institution's Office of Sponsored Programs. Throughout the 2021-2022 academic year, the USM was awarded over \$1.57 billion in external awards. This represents a 1.78% decrease from the 2020-2021 academic year.

Table 13. External funding per institution over the last 5 years.

	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022
Comprehensive						
BSU	\$8,750,023	\$10,025,960	\$9,870,789	\$12,195,822	\$16,783,732	\$26,044,683
CSU	\$7,765,864	\$6,524,176	\$8,250,738	\$9,674,730	\$9,826,256	\$19,046,560
FSU	\$7,818,382	\$2,041,543	\$3,564,730	\$3,185,636	\$3,351,082	\$7,960,944
SU	\$5,760,833	\$5,141,941	\$8,032,505	\$5,791,637	\$5,135,529	\$8,307,089
TU	\$10,439,414	\$12,953,604	\$14,724,204	\$6,707,767	\$14,364,535	\$15,385,281
UB	\$10,582,279	\$13,698,053	\$14,813,294	\$16,972,599	\$15,962,335	\$19,361,183
UMES	\$19,728,418	\$15,601,754	\$16,750,307	\$18,772,791	\$30,209,484	\$18,399,159
UMGC	\$51,111,131	\$54,782,797	\$57,041,537	\$75,575,017	\$56,772,279	\$50,783,587
Research						
UMB	\$553,170,320	\$664,599,070	\$664,120,371	\$684,752,810	\$690,112,744	\$604,358,538
UMBC	\$92,193,683	\$77,180,308	\$79,741,464	\$72,517,690	\$72,825,769	\$99,405,901
UMCP	\$509,225,382	\$538,013,239	\$566,559,047	\$613,620,510	\$663,211,652	\$673,615,145
UMCES	\$24,739,098	\$26,833,197	\$21,424,116	\$23,184,557	\$23,461,321	\$30,770,444
Overall	\$1,301,284,827	\$1,427,395,642	\$1,464,893,102	\$1,542,951,566	\$1,602,016,718	\$1,573,438,515

Source: USM Annual Extramural Awards Survey

SUMMARY

This report provided summary data on faculty workload for the University System of Maryland for the 2021-2022 academic year in the areas of faculty contributions to student success, their disciplines, and service activities.

While there are variations across institutions, production of SCH kept pace with overall enrollment trends in 2020-21, suggesting there are sufficient numbers of courses available for students to graduate in a timely fashion despite the extraordinary circumstances that faculty worked in during the global pandemic. This is further substantiated by the fact that the number of degrees awarded continues to rise and four-year and six-year graduation rates continue to improve. That said, to ensure we are keeping pace with longer-term enrollment trends, the USM continues to track SCH generated by core instructional faculty.

The data indicate that teaching responsibilities continue to shift, but less-so over to part-time faculty as is commonly thought and more-so over to full-time, non-tenure track instructional faculty whose primary responsibility is teaching.

At the same time, non-instructional productivity in the form of scholarship and service remained at very high levels. External research funding is still high at \$1.57 billion in the 2021-2022 academic year.



USM Report on Extramural Funding FY 2022

Major sources of support for activities at the USM institutions come from extramural sources, including grants and contracts. The faculty and staff of USM institutions obtain funding for research, education, and public service activities from many sources. This report shows how many proposals were generated, how many awards were received, and the total amount of funding received from external sources for each institution and the USM overall.

In FY 2022, when accounting for funding received by USM institutions from sources other than another USM institution, the System received a total of \$1,573,438,515.81 in extramural funding, a 1.58% decrease from the FY 2021 total of \$1,598,843,604.81. UMB and UMCP garnered the largest extramural funding totals among System institutions. BSU, CSU, FSU, SU, TU, UBalt, UMBC, UMCES, and UMCP obtained higher levels of extramural funding than in FY 2021.

Table 1 shows how much income each institution generated in the past two years from grants and contracts from the federal government, Maryland state agencies, non-profit foundations, corporations, and other sources, such as non-governmental organizations. Table 1 also shows the number of proposals submitted to each type of funding source and the number of grants awarded. Awards are counted in the year they are received. It should also be noted that in this report, the number of awards represents not only new awards but also amendments to existing awards that provide additional funding not previously accounted for. Institutions that receive a high percentage of awards funded in increments will have a higher number of awards than proposals, since one initial proposal could result in multiple funding actions. It should also be noted that some awards received in FY 2022 were the result of proposals submitted in a prior fiscal year and that notification regarding the funding of some proposals was still pending when the fiscal year closed.

The degree to which institution secured funding from the various sources differs by institution. The federal government continues to be the largest funding source for the System as a whole (approximately 60% of the USM total – similar to FY 2021) and the majority of our institutions (eleven of twelve). However, the state government, corporations and foundations, and other sources also provide critical support for USM institutions. System-wide, the number of awards is up although the number of proposals has decreased. However, as noted above, awards received in FY 22 could be the result of proposals submitted in a prior fiscal year.

Table 2 shows how the overall external funding to the USM and the funding to most USM institutions have been steadily increasing since FY 2018 until the small decrease this year. Only three institutions are down in funding from last year, and one of those, UMES, is a shift back to their pre-FY 2021 totals. FY 2021 was the standout year for UMES; their FY 2022 total is more standard. UMB's and UMGC's decreases are nominal. On the other hand, Coppin and Frostburg posted over 100% increases in funding from FY 2021 totals, and several other institutions realized double-digit percent increases over FY 2021.

Institutions whose funding levels increased this year attribute those increases to the diversification of funding streams, staffing improvements in sponsored research offices, more efficient tracking of faculty awards, a focus on increasing the number of proposals with attention to higher-dollar value awards, and an increase in sponsors' releasing funding to resume projects that were on hold or extended during the height of COVID.

Finally, the USM recognizes that, in February 2022, UMBC was notified that the University had been reclassified by the Carnegie Commission on Higher Education and distinguished as a *Doctoral University – Very High Research Activity (R1)* institution. The Research and Creative Achievement Community at UMBC worked arduously to attain this prestigious designation and is dedicated to continue striving for research excellence to ensure UMBC's recognition as a leading research institution.

Table 1
Extramural Funding for the USM – Fiscal Years 2021 and 2022

FY 2021

USM

Source	Award Amount	Awards	Proposals
Federal	\$981,463,488.56	2,700	3,316
State	\$211,406,619.37	1,967	862
Corporate	\$93,801,776.00	1,503	1,175
Foundations	\$118,499,225.08	848	927
Other	\$216,154,025.75	2,727	2,343
TOTAL	\$1,621,325,134.76	9,745	8,623
Total Less Other USM	\$1,598,843,604.81		

BSU

Source	Award Amount	Awards	Proposals
Federal	\$14,214,128.20	33	33
State	\$2,537,204.00	16	10
Corporate	\$12,400.00	2	0
Foundations	\$20,000.00	1	0
Other	\$5,000.00	7	4
TOTAL	\$16,788,732.20	59	47
Total Less Other USM	\$16,783,732.00		

CSU

Source	Award Amount	Awards	Proposals
Federal	\$7,665,680.36	18	22
State	\$1,637,036.37	34	41
Corporate	\$298,349.00	7	26
Foundations	\$225,190.00	6	9
Other	\$117,538.75	22	22
TOTAL	\$9,943,794.48	87	120
Total Less Other USM	\$9,826,255.73		

FSU

Source	Award Amount	Awards	Proposals
Federal	\$2,140,867.00	6	11
State	\$1,153,865.00	17	15
Corporate	\$0.00	0	0
Foundations	\$21,500.00	3	4
Other	\$513,210.00	12	19
TOTAL	\$3,829,442.00	38	49
Total Less Other USM	\$3,351,082.00		

SU

Source	Award Amount	Awards	Proposals
Federal	\$1,267,788.00	3	12
State	\$4,721,019.00	49	50
Corporate	\$0.00	0	1
Foundations	\$39,735.00	8	12
Other	\$908,401.00	30	44
TOTAL	\$6,936,943.00	90	119
Total Less Other USM	\$5,135,529.00		

FY 2022

USM

Source	Award Amount	Awards	Proposals
Federal	\$982,150,520.42	2,771	3,015
State	\$216,597,040.69	1,285	838
Corporate	\$111,764,284.52	1,457	1,029
Foundations	\$65,623,111.14	907	667
Other	\$251,694,152.30	3,807	2,395
TOTAL	\$1,627,829,109.07	10,227	7,944
Total Less Other USM	\$1,573,438,515.81		

BSU

Source	Award Amount	Awards	Proposals
Federal	\$25,402,538.42	50	31
State	\$514,093.00	10	10
Corporate	\$111,052.00	4	0
Foundations	\$18,000.00	1	2
Other	\$0.00	0	1
TOTAL	\$26,045,683.42	65	44
Total Less Other USM	\$26,044,683.42		

CSU

Source	Award Amount	Awards	Proposals
Federal	\$17,358,807.00	10	35
State	\$859,834.44	17	25
Corporate	\$725,575.00	12	18
Foundations	\$936,250.35	14	28
Other	\$143,331.94	1	8
TOTAL	\$20,023,798.73	54	114
Total Less Other USM	\$19,046,559.90		

FSU

Source	Award Amount	Awards	Proposals
Federal	\$4,834,634.01	12	19
State	\$2,911,359.23	22	19
Corporate	\$55,000.00	2	3
Foundations	\$28,600.00	5	8
Other	\$255,642.12	15	20
TOTAL	\$8,085,235.36	56	69
Total Less Other USM	\$7,960,944.36		

SU

Source	Award Amount	Awards	Proposals
Federal	\$3,801,382.00	11	18
State	\$4,719,265.00	44	46
Corporate	\$25,000.00	1	2
Foundations	\$120,392.00	13	17
Other	\$661,090.00	36	62
TOTAL	\$9,327,129.00	105	145
Total Less Other USM	\$8,307,089.00		

FY 2021

TU

Source	Award Amount	Awards	Proposals
Federal	\$4,896,080.00	25	44
State	\$8,676,894.00	56	32
Corporate	\$360,167.00	9	12
Foundations	\$84,500.00	3	22
Other	\$721,841.00	25	36
TOTAL	\$14,739,482.00	118	146
Total Less Other USM	\$14,364,535.00		

FY 2022

TU

Source	Award Amount	Awards	Proposals
Federal	\$8,072,387.00	26	41
State	\$4,115,455.00	39	35
Corporate	\$813,627.00	14	9
Foundations	\$315,316.00	11	23
Other	\$2,143,495.00	31	59
TOTAL	\$15,460,280.00	121	167
Total Less Other USM	\$15,385,281.00		

UBalt

Source	Award Amount	Awards	Proposals
Federal	\$8,921,453.00	7	12
State	\$5,090,115.00	33	31
Corporate	\$0.00	0	2
Foundations	\$537,986.08	16	28
Other	\$1,899,919.00	12	16
TOTAL	\$16,449,473.08	68	89
Total Less Other USM	\$15,962,335.08		

UBalt

Source	Award Amount	Awards	Proposals
Federal	\$10,240,360.00	7	6
State	\$6,576,578.48	32	27
Corporate	\$14,096.00	2	4
Foundations	\$455,082.00	14	27
Other	\$2,361,867.00	20	17
TOTAL	\$19,647,983.48	75	81
Total Less Other USM	\$19,361,183.48		

UMB

Source	Award Amount	Awards	Proposals
Federal	\$365,003,989.00	765	1,049
State	\$92,682,859.00	328	307
Corporate	\$63,343,336.00	605	492
Foundations	\$93,474,990.00	360	560
Other	\$77,705,951.00	449	839
TOTAL	\$692,211,125.00	2,507	3,247
Total Less Other USM	\$690,112,744.00		

UMB

Source	Award Amount	Awards	Proposals
Federal	\$324,855,489.00	756	952
State	\$109,812,653.00	385	278
Corporate	\$63,646,080.00	578	388
Foundations	\$24,315,597.00	198	293
Other	\$113,544,152.00	557	949
TOTAL	\$636,173,971.00	2,474	2,860
Total Less Other USM	\$604,358,538.00		

UMBC

Source	Award Amount	Awards	Proposals
Federal	\$40,084,209.00	209	307
State	\$20,545,578.00	43	62
Corporate	\$3,744,283.00	68	101
Foundations	\$3,240,208.00	49	85
Other	\$16,259,685.00	106	182
TOTAL	\$83,873,963.00	475	737
Total Less Other USM	\$72,825,769.00		

UMBC

Source	Award Amount	Awards	Proposals
Federal	\$62,660,443.36	296	267
State	\$15,762,929.76	47	65
Corporate	\$4,355,166.52	72	72
Foundations	\$7,112,044.79	77	96
Other	\$24,423,579.24	145	182
TOTAL	\$114,314,163.67	637	682
Total Less Other USM	\$99,405,901.02		

UMCES

Source	Award Amount	Awards	Proposals
Federal	\$13,428,869.00	115	141
State	\$5,521,399.00	44	33
Corporate	\$624,414.00	6	6
Foundations	\$1,566,265.00	28	28
Other	\$2,782,234.00	31	29
TOTAL	\$23,923,181.00	224	237
Total Less Other USM	\$23,461,321.00		

UMCES

Source	Award Amount	Awards	Proposals
Federal	\$12,363,940.00	128	181
State	\$4,139,923.00	54	44
Corporate	\$11,254,909.00	13	13
Foundations	\$1,751,780.00	31	27
Other	\$1,812,160.00	37	32
TOTAL	\$31,322,712.00	263	297
Total Less Other USM	\$30,770,444.00		

FY 2021

UMCP

Source	Award Amount	Awards	Proposals
Federal	\$443,488,526.00	1,477	1,622
State	\$66,216,973.00	1,317	245
Corporate	\$25,012,552.00	798	529
Foundations	\$19,194,091.00	367	170
Other	\$114,614,730.00	2,021	1,133
TOTAL	\$668,526,872.00	5,980	3,699
Total Less Other USM	\$663,211,652.00		

UMES

Source	Award Amount	Awards	Proposals
Federal	\$24,435,803.00	37	58
State	\$2,253,519.00	29	34
Corporate	\$100,000.00	1	3
Foundations	\$25,760.00	2	6
Other	\$514,766.00	10	15
TOTAL	\$27,329,848.00	79	116
Total Less Other USM	\$27,036,371.00		

UMGC

Source	Award Amount	Awards	Proposals
Federal	\$55,916,096.00	5	5
State	\$370,158.00	1	2
Corporate	\$306,275.00	7	3
Foundations	\$69,000.00	5	3
Other	\$110,750.00	2	4
TOTAL	\$56,772,279.00	20	17
Total Less Other USM	\$56,772,279.00		

FY 2022

UMCP

Source	Award Amount	Awards	Proposals
Federal	\$446,399,505.00	1,434	1,401
State	\$65,516,133.00	604	266
Corporate	\$30,163,249.00	749	512
Foundations	\$30,477,549.00	536	138
Other	\$104,729,336.00	2,939	1,039
TOTAL	\$677,285,772.00	6,262	3,356
Total Less Other USM	\$673,615,145.00		

UMES

Source	Award Amount	Awards	Proposals
Federal	\$16,588,755.63	36	59
State	\$953,133.78	26	18
Corporate	\$235,155.00	2	1
Foundations	\$18,500.00	1	4
Other	\$1,563,249.00	26	25
TOTAL	\$19,358,793.41	91	107
Total Less Other USM	\$18,399,159.63		

UMGC

Source	Award Amount	Awards	Proposals
Federal	\$49,572,279.00	5	5
State	\$715,683.00	5	5
Corporate	\$365,375.00	8	7
Foundations	\$74,000.00	6	4
Other	\$56,250.00	0	1
TOTAL	\$50,783,587.00	24	22
Total Less Other USM	\$50,783,587.00		

Table 2
Extramural Funding Summary
Fiscal Years 2018-2022

Institution	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	% Change
						FY21 - FY22
BSU	\$10,054,156.20	\$9,877,588.50	\$12,195,822.12	\$16,788,732.20	\$26,045,683.42	+55.1%
CSU	\$7,254,220.22	\$8,455,960.85	\$9,701,729.56	\$9,943,794.48	\$20,023,798.73	+101.3%
FSU	\$2,436,317.00	\$3,950,208.00	\$3,619,088.00	\$3,829,442.00	\$8,085,235.36	+111.1%
SU	\$5,514,543.00	\$8,705,449.00	\$6,695,773.00	\$6,936,943.00	\$9,327,129.00	+34.4%
TU	\$14,966,768.00	\$12,069,844.00	\$6,727,767.00	\$14,739,482.00	\$15,460,280.00	+4.89%
UBalt	\$13,963,210.00	\$15,026,162.00	\$17,311,342.00	\$16,449,473.08	\$19,647,983.48	+19.4%
UMB	\$667,402,728.00	\$664,650,088.00	\$686,875,487.21	\$692,211,125.00	\$636,173,971.00	-8.09%
UMBC	\$86,214,206.00	\$90,474,514.00	\$81,005,288.00	\$83,873,963.00	\$114,314,163.67	+36.2%
UMCES	\$27,140,666.81	\$21,741,883.36	\$24,095,256.03	\$23,923,181.00	\$31,322,712.00	+30.9%
UMCP	\$545,314,107.00	\$569,462,970.00	\$619,908,919.00	\$668,526,872.00	\$677,285,772.00	+1.31%
UMES	\$16,098,480.91	\$17,194,525.54	\$18,890,552.00	\$27,329,848.00	\$19,358,793.41	-29.1%
UMGC	\$54,782,797.00	\$57,041,537.00	\$75,575,017.00	\$56,772,279.00	\$50,783,587.00	-10.5%
Institutional Total	\$1,451,142,200.14	\$1,478,650,730.25	\$1,562,602,040.92	\$1,621,325,134.76	\$1,627,829,109.07	+0.40%
USM Total (LESS OTHER USM)	\$1,429,166,242.14	\$1,460,932,947.34	\$1,542,951,565.87	\$1,598,843,604.81	\$1,573,438,515.81	-1.58%



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

TOPIC: Motion to Adjourn and Reconvene in Closed Session

COMMITTEE: Education Policy and Student Life

DATE OF COMMITTEE MEETING: Tuesday, January 10, 2023

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’ Committee on Education Policy and Student Life 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 Committee determines should be discussed in open session or added to the closed session agenda for discussion. In that event, the Committee 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: That the Board of Regents’ Committee on Education Policy and Student Life vote to reconvene in closed session.

COMMITTEE ACTION: DATE: January 10, 2023

BOARD ACTION: DATE:

SUBMITTED BY: Joann A. Boughman 301-445-1992 jboughman@usmd.edu



STATEMENT REGARDING CLOSING A MEETING
OF THE
USM BOARD OF REGENTS

Date: Tuesday, January 10, 2023

Time: 11:30 a.m. (approximately)

Location: Virtual via Zoom

STATUTORY AUTHORITY TO CLOSE A SESSION

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

- (1) To discuss:
 - (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) 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) [] 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.

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

- [] Administrative Matters

TOPICS TO BE DISCUSSED: (List topics to be discussed)

The Committee on Education Policy and Student Life will discuss recommendations for Regents' Faculty Awards and nominations for honorary degrees.

REASON FOR CLOSING:

To maintain confidentiality of personnel-related and personal information of candidates for faculty awards and honorary degrees. (§3-305(b)(1) and (2)).