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

Institution Submitting Proposal	University of Maryland Global Campus

Each action below requires a separate proposal and cover sheet.

- (●) New Academic Program
- ( ) New Area of Concentration
- ( ) New Degree Level Approval
- ( ) New Stand-Alone Certificate
- ( ) Off Campus Program
- ( ) Substantial Change to a Degree Program
- ( ) Substantial Change to an Area of Concentration
- ( ) Substantial Change to a Certificate Program
- ( ) Cooperative Degree Program
- ( ) Offer Program at Regional Higher Education Center

Payment Submitted: (●) Yes ( ) No

Payment Type: (●) R*STARS # JF042612 ( ) Check # JF042612

Payment Amount: $850

Date Submitted: 05/01/25

Department Proposing Program	School of Cybersecurity and Information Technology	
Degree Level and Degree Type	Master of Science	
Title of Proposed Program	Applied Artificial Intelligence	
Total Number of Credits	30	
Suggested Codes	HEGIS: 701.00	CIP: 110102.0000
Program Modality	( ) On-campus (●) Distance Education (fully online) ( ) Both	
Program Resources	(●) Using Existing Resources ( ) Requiring New Resources	
Projected Implementation Date (must be 60 days from proposal submisison as per COMAR 13B.02.03.03)	(●) Fall ( ) Spring ( ) Summer	Year: 2026
Provide Link to Most Recent Academic Catalog	URL: https://www.umgc.edu/current-students/degree-requirements/catalogs	
Preferred Contact for this Proposal	Name: Blakely Pomietto	
	Title: Senior Vice President and Chief Academic Officer	
	Phone: (301) 985-7414	
	Email: blakely.pomietto@umgc.edu	
President/Chief Executive	Type Name: Blakely Pomietto	
	Signature: 	Date: 05/01/2025
	Date of Approval/Endorsement by Governing Board:	05/01/2025

Revised 1/2021

UNIVERSITY OF MARYLAND
GLOBAL CAMPUS
OFFICE OF THE CHIEF ACADEMIC OFFICER

May 1, 2025

Dr. Sanjay Rai
Secretary of Higher Education
Maryland Higher Education Commission
217 E. Redwood Street, 21st Floor
Baltimore, MD 21202

Dear Secretary Rai:

On behalf of the University of Maryland Global Campus (UMGC), this letter serves as an official request for a new Master of Science degree in Applied Artificial Intelligence (HEGIS: 0701.XX; CIP: 11.0102). 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 implementing this new program in Fall 2026. If you have any questions or require additional information about this proposal, please contact me at **blakely.pomietto@umgc.edu.**
Payment for review of this proposal has been made to MHEC via R*STARS interagency fund transfer, transaction number JF042612 in the amount of $850 in accordance with the MHEC fee schedule.

Sincerely,

Blakely R. Pomietto, EdD
Senior Vice President and Chief Academic Officer

CC: Candace Caraco, PhD, Associate Vice Chancellor for Academic Affairs, University System of Maryland

Academic Program Proposal
University of Maryland Global Campus

Request for a New Master of Science in Applied Artificial Intelligence

The University of Maryland Global Campus (UMGC) is proposing an MS in Applied Artificial Intelligence (AI) as a 30-credit program which is designed to equip graduate learners with both essential technical AI foundations and specialized application skills in either Computer Vision/Natural Language Processing (CV/NLP) or AI and Cybersecurity. The program's stackable credential structure allows students to earn a badge while progressing toward their full degree, culminating in a capstone project that demonstrates their ability to apply AI solutions to real-world problems.

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 academic programs the university offers and how those programs are designed and delivered. By mission and state mandate, every aspect of the UMGC learner experience is designed from its origins for working-adult and military-affiliated students, providing a learning ecosystem that can be seamlessly accessed from anywhere in the world. The selection, training, and evaluation of faculty; success coach advising model; virtual classroom; academic resources; student support services; and the term and session structure are all deliberately derived from adult-learning science in distance and distributed modalities.

In particular, the demographic profile of UMGC's students drives the design and delivery of our learning model. The average age of UMGC's undergraduate students is 31 years old, and 79% of these students work full-time. The average age of UMGC's graduate students is 37 years old, and 80% of these students work full-time. Further, 44% of all current UMGC students report having 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.

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.

UMGC's strong relationship with the military community is part of our institutional history and identity. Currently, approximately two-thirds of our undergraduate students and one-third of our graduate 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 American soldiers on military installations in Europe. The relationship between UMGC and the military has continued to expand over the ensuing decades due to our intentional program design and delivery model that meets adult learners where they are, whether through asynchronous online courses or through innovative hybrid course delivery modes on military bases in Germany, Italy, Japan, Korea, Guam, Colorado, Virginia, and other military locations across the nation and 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 consistently 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.

The MS in Applied AI 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 and military-affiliated learners. The program provides a learner-focused experience based on leading-edge adult learning theory and curriculum design. This fully online, asynchronous program model offers flexibility for students who are seeking to refresh and reshape their career opportunities. Students have the opportunity to gain new knowledge and learn and practice new skills as they progress through formative instruction. A detailed description of the proposed program requirements, curriculum, and coursework is included in Section G of this proposal.

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 education, UMGC awards associate's, bachelor's, master's, and doctoral degrees, as well as undergraduate and graduate certificates. The university's academic inventory includes programs that are core to any public university, while UMGC's mission to serve adult students also results in a sustained academic emphasis on career-relevant and workforce-aligned programs.

UMGC's new ***2024-2030 Strategic Plan*** establishes priorities and strategies guiding the university to achieve its vision of becoming the learner-centric, data-driven, and skills-based school of choice for adults and businesses. This plan is rooted in foundational commitments reflecting UMGC's history and mission and establishes a series of strategic priorities that advance the university's vision and position us for the future. The five key priorities established in this plan are:

1) Market-responsive portfolio management that continuously adapts to learner and employer needs
2) A skills architecture that can be translated between educational and work experiences

3) Targeted expansion that strengthens and diversifies our learner population
4) A responsive, tailored, and seamless experience to maximize the success of our diverse learners
5) Intentional study of and investment in our people's needs

This proposal contributes directly to two of the five strategic priorities in UMGC's new strategic plan, utilizing "market-responsive portfolio management that continuously adapts to learner and employer needs" and employing "a skills architecture that can be translated between educational and work experiences." Successful portfolio management requires a focus on university-wide agility, effective resource utilization, and market-responsiveness, all of which were key considerations driving UMGC's decision to develop this program.

Further, the innovative curriculum in this program will provide opportunities for learners to develop core skills in artificial intelligence, machine learning, deep learning, data engineering, computer vision, natural language processing, AI ethics, and specialized applications such as cybersecurity and software engineering that are explicitly aligned with their current needs and interests, while also transferable to a broad range of careers and professional experiences.

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.)

Course development for the new program will be funded through a departmental budget allocation as part of the 2025 - 2026 budget process. The existing base of FTE faculty (full-time and adjunct), administrative staff, and support staff will support the program's initial launch. Tables 11 and 12 in Section L provide additional details and narrative explanations for anticipated resources/revenues and expenditures during the first five years of the program.

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

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

UMGC's support services are designed to accommodate students' access through entirely online and remote delivery. 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:

- Help@UMGC provides support services for the learning management system (online learning platform). UMGC's learning management system is Desire2Learn (D2L); its internal adaptation is called LEO. A specialized technical support team for LEO questions and problems is available 24 hours a day, 7 days a week, 365 days a year. In addition, UMGC trains faculty to handle some LEO troubleshooting; publishes LEO FAQs; and provides chat, phone, and e-mail access to a Help Center.
- MyUMGC is a self-service portal that provides access to UMGC administrative functions and student records. UMGC has designed this portal to ensure that students around the world can complete administrative tasks and view their academic records at their convenience.
- 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 may encounter in online classrooms.

- Success Coaches and Military Education Coordinators are committed to partnering with students as they navigate their UMGC journey through thought provoking and supportive conversations, empowering students to make informed degree planned decisions, connecting them with the right resources at the right time, and celebrating the student's successful milestones and educational goals.
- Students receive support in educational technology from UMGC's Virtual Lab Assistants team. Team members are well-versed in the content of the courses they support and can quickly help a struggling student.
- The Effective Writing Center (EWC) offers many writing-related services to students, including resources for improving writing skills, citing and referencing resources, and supporting research activities. The EWC is directly accessible through a link within each online classroom.
- Turnitin has been integrated directly into all online courses as a developmental tool for students to assist with achieving authenticity in their writing. TII's Draft Coach is another tool available to students to help with writing and citing skills.
- UMGC's Library is directly accessible through a link within each online classroom. UMGC's librarians help educate students in the use of library and information resources and services and develop and manage UMGC's extensive online library collection.
- First Term Experience provides high engagement, mentorship, and relevant content in first-term courses, including PACE (Program and Career Exploration), to propel students into their chosen academic programs.
- Free 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. Students can choose to connect at once or schedule a meeting with a tutor at another time. Group sessions are scheduled for certain subject areas, and every student has access to tutoring for Reading Comprehension and Technology skills.
- The Office of Accessibility Services arranges accommodations for students with medical conditions protected under the Americans with Disabilities Act. Students can register with this office via an online form and work with staff to receive appropriate accommodation for their courses.
- Free, anonymous mental health support is offered to students via an online peer-to-peer support service, a 24/7 wellness line supported by licensed clinicians, and a self-service online provider directory.
- Student Engagement and Programming offers students a chance to connect virtually via UMGC's various **clubs and organizations** (co-curricular clubs, honor societies, and affinity groups). All official student clubs have a faculty advisor to support student leaders. These groups provide professional growth opportunities, leadership development, and academic recognition. Additionally, students have the opportunity to connect with global peers with a newly acquired online social platform called InScribe.
- UMGC is invested in helping students who are facing other challenges in life that impact finances and basic needs. For example, the **SAFER Program** offers emergency funding to students demonstrating distress. We are continuously looking for ways to better serve our students and to connect them to resources that support equitable access.
- The Office of Career Services and its CareerQuest portal provide quality resources and services to assist students and alumni with their career planning and job search needs, including the Community Connect mentorship and InternPLUS programs. Career Services

supports students transitioning from one career field to another or looking to advance in their current career, in addition to those entering the workforce for the first time.
- The Tuition Planning team provides students with all-inclusive consultative financial support for all UMGC payment methods, with a focus on comprehensive funding and tuition planning to help guide students from their first class to graduation.
- The Financial Aid Office helps students understand and navigate the process of applying for financial aid. Staff members have expertise with a variety of financial aid options, as UMGC students may be using employer assistance, military or 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.

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 plays a pivotal role in meeting societal needs through making educational opportunities and choices available for all students within the State of Maryland, including minority students, first generation students, and military-affiliated and working-adult students. In February 2023, UMGC was designated as a Minority Serving Institution by the U.S. Department of Education Office of Postsecondary Education.

The university currently enrolls some 24,000 African American undergraduate and graduate students, 13,000 Hispanic/Latino students, 5,000 Asian students, and 15,000 students who self-identify as Native American, Hawaiian or Pacific Islander, Multiracial, or Other. Currently, more than 50% of all UMGC degrees and certificates are granted to minority students.

In the School of Cybersecurity and Information Technology, where the MS in Applied AI will be housed, the average age of all graduate students is 34. A majority of these students (54%) are enrolled at UMGC on a part-time basis. In AY 2024-2025, 21% of these students were military-affiliated, and 16% of these military-affiliated students were on active duty. Graduate students in the School of Cybersecurity and Information Technology are also geographically dispersed, with only 38% residing in Maryland. African American students constitute 38% of all current graduate students in the School of Cybersecurity and Information Technology, and 11% identify as Hispanic/Latino, 7% as Asian, and .7% as Native American, Hawaiian or Pacific Islander, Multiracial, or Other.

UMGC remains committed to serving all students who have been previously underserved in higher

education. The statistics above indicate that UMGC is successfully reaching and serving these student populations.

2. **Provide evidence that the perceived need is consistent with the 2022 Maryland State Plan for Higher Education.**

The MS in Applied AI is designed to meet the needs of our students, the demands of employers, and to support present and future postsecondary priorities of the State, as identified in the ***2022 Maryland State Plan for Higher Education***. This program supports the goals and priorities in the State Plan in the following ways:

The program will support Goal 1 (Access) – specifically Priority 4 (systems for specific student populations to access affordable and quality postsecondary education) – 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. UMGC administers its programs to meet the University System of Maryland's 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.

UMGC's commitment to access and affordability is synonymous with our commitment to diversity and inclusion. The university's open admission approach at both the undergraduate and graduate levels is central to these commitments. The process to apply for admission is streamlined and does not require the submission of standardized test scores. Admission requirements for this new program will be aligned with this mission. UMGC remains committed to maintaining its position in serving the educational needs of historically underserved students.

Further, the program will support Goal 2 (Success) – specifically Priority 5 (commitment to high-quality postsecondary education in Maryland) and Priority 7 (postsecondary education as a platform for ongoing lifelong learning) – in the State Plan, as it is based on the principles of skills- and performance-based learning that are at the forefront of developments in adult learning in higher education. Skills-aligned learning is an outcomes-based approach to education that emphasizes what students should know and be able to do to be successful in their chosen disciplines, fields, and careers. The approach 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 skills in real time.

Like other UMGC programs, this new program will employ authentic, project-based assessments relevant to tasks graduates will perform on the job; such projects serve as the means of instruction and assessment of learning in the program. The curriculum and content will focus on skills-aligned learning directed toward problems and issues facing practicing professionals. Retention and success focus on students' learning experiences and are improved through enhanced learning resources provided online within the learning management system. The methodology and on-demand nature of this type of student support is reflective of best practices in online learning.

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.**

UMGC students are employed in a variety of industries such as healthcare, human resources, social services, finance, manufacturing, government, IT, cybersecurity, consulting, education, defense industries, and the military. The typical student at UMGC is a working adult with 10+ years of work experience. Almost two-thirds of undergraduate students and one-third of graduate students are in the military or are transitioning from the military to a civilian career.

The MS in Applied AI is expected to prepare graduates for growing market demand across multiple industries including cybersecurity and software engineering, with industry trends showing 34% growth in AI job postings and median salaries of $133,000, preparing graduates for mid-to-senior level roles such as AI Engineer, Machine Learning Engineer, Data Scientist, and AI Solutions Architect.

Table 1 below presents the Standard Occupational Classification (SOC) Codes that UMGC has identified, based upon the CIP-SOC crosswalk developed by Lightcast, as most closely aligned to the CIP code for UMGC's proposed program.

Table 1: Aligned Occupations for Graduates of UMGC's Proposed MS in Applied AI

SOC Code	Occupational Title
15-1299	Computer Occupations, All other
15-1252	Software Developers
15-2051	Data Scientists
15-1243	Database Architects
15-1242	Database Administrators

Using the SOC codes identified in Table 1, Table 2 below presents 2022-2032 employment projections for these target occupations from the Maryland Department of Labor.

Table 2: Maryland Occupational Projections 2022-2032

		Employment			
SOC Code	**Occupational Title**	**2022**	**2032**	**# Change**	**% Change**
15-1299	Computer Occupations, All other	22,759	26,979	4,220	18.54%
15-1252	Software Developers	34,970	45,887	10,917	31.22%
15-2051	Data Scientists	2,396	3,338	942	39.32%
15-1243	Database Architects	777	876	99	12.74%
15-1242	Database Administrators	2,119	2,373	254	11.99%
Total		63,021	79,453	16,432	26.07%

Data Source: Maryland Department of Labor Long Term Occupational Projections
https://www.dllr.state.md.us/lmi/iandoproj/

As evident from the data presented in Table 2, occupations that are at the core of the proposed program are in strong demand and are projected to grow over the next decade. An additional

16,432 employment opportunities will be created within these core occupational categories in Maryland between 2022 and 2032, a 26% increase in newly created positions. This growth outlook is also apparent in the national demand landscape for specialists within these occupations. Table 3 below presents the 2022-2032 national occupational projections for these same SOC codes from the U.S. Bureau of Labor Statistics.

Table 3: National Occupational Projections 2022-2032

SOC Code	Occupational Title	Employment 2022	Employment 2032	Employment # Change 2022-2032	Employment % Change 2022-2032	Occupational Openings 2022-2032 Annual Average
15-1221	Computer and Information Research Scientists	36.6	46	9.4	25.6%	3.4
15-1252	Software Developers	1,692.1	1,995.7	303.7	17.9%	125.1
15-2051	Data Scientists	202.9	276	73.1	36%	20.8
15-1243	Database Architects	61.4	68.0	6.6	10.8%	4.2
15-1242	Database Administrators	80.5	87.1	6.6	8.2%	5.3
Total		**2073.5**	**2472.8**	**399.4**	**19.3%**	**158.8**

Data Source: U.S. Bureau of Labor Statistics Employment Projections
https://data.bls.gov/projections/occupationProj

Table 3 illustrates strong demand nationally for occupations that match the skillset for MS in Applied AI graduates, with expected aggregate growth across these occupations of more than 19%, corresponding to over 399,400 newly created employment opportunities between 2022 and 2032.

The next section provides additional data on market demand and employment opportunities in the State of Maryland.

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

The labor market analysis presented in Table 4 below represents the number of job openings in Maryland and nationwide from March 2023 to March 2025, using Lightcast data for the top five program-aligned job categories. Table 5 presents an analysis from a skills perspective, rather than a job title perspective. It is evident from this analysis that the program-aligned skills desired by Maryland employers mirror the skills sought nationwide.

Further analysis of the data reveals several notable patterns. Maryland shows a significantly higher demand for Systems Engineering skills (26%) compared to the national average (11%), likely reflecting the state's concentration of defense, aerospace, and government contractors. This presents a distinctive opportunity for UMGC's Applied AI program to specifically address this regional skills gap. Additionally, while job titles show similar patterns between Maryland and national markets, Systems Engineer positions are proportionally more prevalent in Maryland, again

highlighting the state's unique industry composition.

The data also demonstrates a consistent demand for core technical skills like Python programming and Computer Science fundamentals across both markets, validating UMGC's curriculum design with its strong technical foundation. The comparable percentages for Agile Methodology skills (27% MD vs. 24% nationwide) indicate employers' emphasis on practical implementation methodologies, which aligns with UMGC's focus on applied learning and real-world projects. Finally, when examining trends over the two-year period (March 2023 - March 2025), the data suggests sustained or growing demand in all key categories, supporting the long-term viability of the proposed program.

Table 4: Top 5 Program-Aligned Job Titles in Maryland and Nationwide

Job Title	Maryland Unique Postings Mar 2023 – Mar 2025	% of Postings	Nationwide Unique Postings Mar 2023 – Mar 2025	% of Postings
Software Engineer	601	37%	23,664	36%
Data Scientist	502	55%	23,137	44%
Systems Engineer	763	36%	10,651	40%
Data Engineer	117	56%	8,554	45%
Data Analyst	125	48%	7,685	45%

Data Source: Lightcast **https://lightcast.io/**

Table 5: Top 5 Program-Aligned Specialized Skills in Maryland and Nationwide

Skills	Maryland Unique Postings 2022 - 2032	% of Postings	Nationwide Unique Postings 2022 - 2032	% of Postings
Computer Science	8,306	55%	345,002	54%
Python	5,332	35%	216,009	34%
Agile Methodology	4,102	27%	157,422	24%
Systems Engineering	3,914	26%	67,778	11%
Software Engineering	3,829	25%	143,326	22%
Java	3,227	21%	104,567	16%

Data Source: Lightcast **https://lightcast.io/**

Further market analysis of emerging AI-specific skills reveals substantial projected growth over the next five years, reinforcing the timeliness and value of the proposed MS Applied AI. Machine Learning is projected to increase by 34.7% over the next five years, supported by an overall market CAGR of 34.8% that will reach $503.40 billion by 2030 (Statista, 2025). Most notably, Deep Learning shows dramatic growth projections at 84%, while Python (21.6%), Tableau (28.2%), Artificial Intelligence (24.8%), and Natural Language Processing (22.8%) all demonstrate strong projected demand increases (Itransition, 2025). This growth is being driven by widespread AI adoption across multiple sectors, with the global AI market expected to reach $826.70 billion by 2030 (Statista, 2025).

These projections align with and extend the Lightcast data presented in Tables 4 and 5, particularly regarding the high demand for Python skills. Organizations are increasingly prioritizing AI training

and upskilling initiatives, with 42% of employers planning to focus on AI training by 2027 and 36% expecting to upskill existing employees for AI adaptation (Analytics Vidhya, 2025 Dice, 2025). The percentage of job postings requiring AI skills rose to 1.8% in the United States in 2024, up from 1.4% in 2023, with Machine Learning Engineers, Data Scientists, AI Researchers, and AI Product Managers being the most sought-after roles (IEEE Spectrum, 2025; CEPR, 2024). Although Python remains the dominant programming language in this field, appearing in 78% of data scientist job postings, demand for specialized AI skills like Natural Language Processing has surged from 5% in 2023 to 19% in 2024 (365 Data Science, 2024). These trends strongly support the strategic emphasis on applied AI within the proposed program curriculum and its alignment with both current and projected labor market needs.

Table 6: Projected 5-Year Growth Rate of Key AI Skills

Skill	Projected Growth Rate
Deep Learning	84.0%
Machine Learning	34.7%
Tableau	28.2%
Artificial Intelligence	24.8%
Natural Language Processing	22.8%
Python	21.6%

Data Sources: Statista (2025), Itransition (2025), IEEE Spectrum (2025), CEPR (2024), and 365 Data Science (2024)

In Appendix A of Maryland's Workforce Needs Analysis, the closely related area of Data Science is identified as an in-demand occupation with an estimated 2,636 job openings during the period 2022 through 2032, and as an area of emerging workforce need, with 39% growth during the same period (Appendix C). Appendix B of the same report identifies AI and Data Science as academic programs which address existing high-demand job needs. Additionally, AI has the potential to enhance and affect a very large number of the current in-demand and emerging job needs, even if these jobs do not use AI at the present time.

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.**

Using projections from the Maryland Department of Labor, Table 6 factors both growth in the number of positions expected to be newly created in each program-aligned SOC category in Maryland and the number of job exits (e.g., retirement, leaving workforce) and transfers (e.g., job changes, turnover) within these SOC categories over the same period (2022-2032).

Table 7: Maryland Occupational Projections Total Openings 2022-2032, Including New Positions, Exits, and Transfers

SOC Code	Occupational Title	Position Changes	Position Exits	Position Transfers	Total Projected Openings
15-1221	Computer and Information Research Scientists	502	638	971	2,111

15-1252	Software Developers	10,917	6,938	14,461	32,316
15-2051	Data Scientists	942	651	1,043	2,636
15-1243	Database Architects	99	209	265	573
15-1242	Database Administrators	254	568	721	1,543
Total		**12,714**	**9,004**	**17,461**	**39,179**

Data Source: Maryland Department of Labor Long Term Occupational Projections
https://www.dllr.state.md.us/lmi/iandoproj/

The projections in Table 6 show that the total number of openings across all program-aligned job categories will yield approximately 39,000 employment opportunities in Maryland alone over the next 10 years (when factoring in job growth, exits, and transfers), or an estimated 3,900 positions annually. When considering the current and projected graduate supply in these fields as presented in the next section, job demand in these occupations far exceeds Maryland's current pipeline of graduates.

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

Table 7 presents completion data from all MS in AI programs across all colleges and universities in the State of Maryland over the most recent four years (2020-2023) for which data are available. Given the market need described in the sections above, even if all graduates from these programs chose to work in Maryland (an improbable scenario), the existing statewide supply of graduates in this field would still be wholly insufficient to satisfy annual market demand. Through this proposed program, UMGC is well-positioned to help fill these gaps and to expand opportunities for returning adult and working students, military-affiliated and veteran students, and career changers to further expand the workforce pipeline and diversify the profession.

Table 8: MS in AI Completions at Maryland Colleges and Universities, In Rank Order of 2023 Degrees Granted

Maryland Institution	2020 Program Completions	2021 Program Completions	2022 Program Completions	2023 Program Completions
Johns Hopkins University	0	0	4	19
Capitol Technical University	0	0	0	0
Total	**0**	**0**	**4**	**19**

Data Source: TRENDS IN DEGREES AND AWARDS BY PROGRAM 2023.pdf (maryland.gov)

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.

A program title and CIP search performed on April 11, 2025, of MHEC's online Academic Program Inventory found three active programs in Maryland with potential similarities to UMGC's proposed program and three proposed programs. Six of these programs are offered by Maryland public four-year institutions. Table 8 below provides a comparative summary of major program features. Unlike other programs currently offered in Maryland, UMGC's proposed MS in Applied AI is fundamentally distinctive in the following ways:

- Stackable credential structure allowing students to earn an AI Badge (9 credits), and full MS degree (30 credits) with clear entry and exit points
- Fully online asynchronous delivery format designed specifically for working professionals with no on-campus requirements
- Affordable tuition structure at $544 per credit hour, significantly lower than competitors ($630-$1,757 per credit)
- Open enrollment approach without strict prerequisites or specific undergraduate degree requirements
- Balanced curriculum combining technical AI foundations with practical and specific applications
- Cross-disciplinary elective options in high-demand areas (Cybersecurity, Computer Vision/NLP) rather than purely technical focus
- Integration with existing UMGC programs allowing for unique industry-aligned specialization pathways
- Program design specifically targeting working adults seeking to apply AI in their existing career

Table 9: Comparison of MS in AI Programs at Maryland Colleges and Universities

Maryland Colleges and Universities	Program Attributes	Differentiation from UMGC's Proposed Program
Capitol Technical University	**Program Title**: Master of Research (MRes) in Artificial Intelligence **CIP**: 11.0102 **Total Credits**: 30 **Modality**: Online **Professional Focus/Distinctive Features**: • Research-intensive degree program • 5 core courses (6 credits each) • Culminates in a master's dissertation • Opportunity to publish original research • Dedicated thesis chair guidance • Industry-expert faculty • Preparation for both industry roles and PhD programs	• Research-oriented focus vs. UMGC's application-oriented approach • 6 credit course structure vs. UMGC's 3 credit structure • Includes dissertation component while UMGC offers project-based learning • Sequential course structure with 2 courses per semester maximum • Fixed curriculum pathway vs. UMGC's flexible options • Different tuition structure at $630 per credit hour (standard rate)

Maryland Colleges and Universities	Program Attributes	Differentiation from UMGC's Proposed Program
Capitol Technical University	**Program Title**: Master of Philosophy (MPhil) in Artificial Intelligence **CIP**: 11.0102 **Total Credits**: 30 **Modality**: Online **Professional Focus/Distinctive Features**: • Combines theoretical AI knowledge with hands-on implementation skills to solve real-world challenges • Emphasizes ethical considerations and societal impacts alongside technical expertise • Cultivates specialized domain knowledge while maintaining adaptability in a rapidly evolving field • Balances academic research experience with practical project management capabilities • Fosters original contributions to AI advancement through both published research and innovative solutions	• Research-intensive, and theory-based program, vs. UMGC's focus on applications. • Program acts as a precursor to the doctoral program in AI (an AI Doctoral Defense is among the listed requirements for the MPhil program) • Mix of 3- and 6-credit classes, vs UMGC's 3-credit classes • Single-track program, vs. UMGC's flexible options • Different tuition structure at $630 per credit hour (standard rate)
Johns Hopkins University	**Program Title**: Master of Science in Artificial Intelligence **CIP**: 11.0102 **Total Credits**: 30 **Modality**: Fully online with some in-person options **Professional Focus/Distinctive Features**: • Developed with Johns Hopkins Applied Physics Lab • 4 required core courses and 6 electives • Multiple specialization options (ML, NLP, Robotics, Computer Vision, etc.) • Taught by active industry professionals and researchers • Proficiency exam options to opt-out of prerequisites • Independent study options	• Different tuition structure ($52,700 total program cost) • Focus on deep technical specialization in core AI disciplines • Emphasis on theoretical foundations and advanced research • Curriculum designed for technical depth in specialized AI fields • Includes prerequisite knowledge requirements with opt-out options • Structured for students with strong technical backgrounds
University of Baltimore	**Program Title**: Master of Science in Artificial Intelligence for Business **CIP**: 52.1399 **Total Credits**: 30 **Modality**: In-person **Professional Focus/Distinctive Features**: • Business-focused AI degree housed	• Narrower focus specifically on business applications • Higher tuition at $875/credit (in-state), $1,209/credit (out-of-state) • Less technical depth in AI foundations

Maryland Colleges and Universities	Program Attributes	Differentiation from UMGC's Proposed Program
	in School of Business • Focus on business ethics and regulatory perspectives • Emphasis on practical application across business functions • Elective options in entrepreneurship, finance, HR, marketing, operations	• Limited technical specialization options • Less flexibility in curriculum choices • No stackable credential structure
Letters of Intent		
University of Maryland Baltimore	**Program Title**: Master of Science in Artificial Intelligence for Drug Development (LOI) **CIP**: 51.2006 **Total Credits**: 30 **Modality**: Asynchronous **Professional Focus/Distinctive Features**: • Highly specialized focus on pharmaceutical applications • 2-year program with 8 required courses • Interdisciplinary program combining AI with pharmaceutical sciences • Focus on AI-enabled Predictive Analytics for drug development • Designed for pharmaceutical industry professionals	• Specialized focus on pharmaceutical industry applications • Fixed curriculum pathway with predetermined courses • Domain-specific concentration in drug development processes • Traditional degree structure without stackable options • Tailored for pharmaceutical industry workflows and methodologies • Designed specifically for professionals in pharmaceutical and regulatory sectors
University of Maryland College Park	**Program Title**: Master of Science in Artificial Intelligence **CIP**: not specified in LOI **Total Credits**: 30 **Modality**: Both in-person and online versions will be available **Professional Focus/Distinctive Features**: • Non-thesis interdisciplinary graduate program • 21 credits of required core courses and 9 elective credits • Core coursework includes probability and statistics, data science, machine learning, computing systems for AI, human-centered approaches, AI and society, and safe and trustworthy AI • Electives in specialized topics like natural language processing, robotics, AI for cybersecurity, AI for healthcare, generative AI, and AI policy • Connected to UMD's Artificial	• Both in-person and online modality options vs. UMGC's fully online approach • Structured with 21 credits of required core courses and 9 elective credits • Connection to UMD's research institute (AIM) • UMD's program places much greater emphasis on the core (21 credits), with only 9 credits given to the electives. UMGC's program takes the reverse approach, starting with a small core (9 credits) which gives both electives the fundamental knowledge required by both, and gives a larger number of credits (21) towards developing depth within the elective area. • Different curriculum structure with specialized electives in

Maryland Colleges and Universities	Program Attributes	Differentiation from UMGC's Proposed Program
	Intelligence Interdisciplinary Institute (AIM) • Focus on both technical training and understanding of societal context • Scheduled for proposal submission in Fall 2025	areas like robotics, NLP, healthcare, and AI policy.
University of Maryland Baltimore County	**Program Title**: Master of Science in Artificial Intelligence **CIP**: not specified in LOI **Total Credits**: 30 (thesis option) or 33 (non-thesis option) **Modality**: In-Person **Professional Focus/Distinctive Features**: • Housed in Computer Science and Electrical Engineering Department • Research-focused approach with thesis and non-thesis options • Core courses in AI principles and machine learning • AI-focused electives in NLP, neural networks, and robotics • Designed for students with CS, IS, or EE backgrounds • Targets future AI researchers, academics, and doctoral candidates • Anticipated submission in Fall 2025	• Exclusively in-person delivery vs. UMGC's fully online format • Different credit requirements (30-33) based on thesis/non-thesis option • Stronger research orientation targeting future academics and researchers • More specific undergraduate background requirements • Different program structure with thesis option available • Focus on theoretical expertise rather than cross-domain applications • Located in Baltimore-Washington tech corridor

2. Provide justification for the proposed program.

The MS in Applied AI program addresses a critical and growing market demand, as evidenced by industry trends showing 34% growth in AI job postings and median salaries of $133,000. The program's unique stackable credential structure (9-credit AI Badge, 30-credit MS degree) provides flexible entry and exit points that specifically serve working professionals who need to upskill while maintaining employment. Unlike research-oriented programs at other institutions or those with narrower domain focus, UMGC's approach delivers a balanced combination of technical AI foundations and practical application skills, preparing graduates for mid-to-senior level roles across multiple industries.

UMGC is uniquely positioned to deliver this program through its established expertise in online education, affordable tuition structure ($544 per credit compared to competitors ranging from $630-$1,757), and flexible asynchronous format designed specifically for working adults. The program's options in areas like Cybersecurity and Computer Vision/NLP represent a significant departure from the Maryland market norm, where 83% of competitor programs focus primarily on technical specializations. While other institutions require rigid prerequisites or specific undergraduate backgrounds, UMGC's open enrollment approach expands access to AI education for professionals seeking to apply AI in their existing domains rather than only those pursuing purely

technical roles.

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.**

A program title and CIP search performed on April 11, 2025, of MHEC's online Academic Program Inventory found no MS in Applied AI programs currently offered at Historically Black Institutions in Maryland. This includes the three HBIs in the University System of Maryland (Bowie State University, Coppin State University, and University of Maryland Eastern Shore) and Morgan State University. UMGC's proposed program will, therefore, have no impact on the implementation or maintenance of high-demand programs at Maryland's 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.**

A program title and CIP search performed on April 11, 2025, of MHEC's online Academic Program Inventory found no MS in Applied AI programs currently offered at Historically Black Institutions in Maryland. This includes the three HBIs in the University System of Maryland (Bowie State University, Coppin State University, and University of Maryland Eastern Shore) and Morgan State University. UMGC's proposed program will, therefore, have no impact on the uniqueness and institutional identities and missions of Maryland's 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 MS in Applied AI was developed in response to the growing market demand for AI professionals, with industry trends showing 34% growth in job postings and median salaries of $133,000. The program was established through a formal product management review process, beginning with a concept approval on December 4, 2024, and a recent approval from UMGC's Academic Affairs Curriculum Council. The program is scheduled for launch in Fall 2026.

The program provides comprehensive technical and strategic foundations in AI through core coursework in machine learning, deep learning, data engineering, and systems design, while emphasizing ethical AI development and practical applications. It features a stackable credential structure beginning with three foundational courses (9 credits open to any graduate learner) resulting in an AI Digital Credential ("AI Badge") and culminating in the full master's degree (30 credits, which includes the AI Badge).

The program is housed within the School of Cybersecurity & Information Technology (CIT) under the Information Technology department and will be overseen by Portfolio Director Elena Gortcheva. Faculty oversight will be provided by subject matter experts with both academic credentials and industry experience in artificial intelligence, machine learning, data engineering, and domain-specific applications. Initially, the program will require approximately 20 new faculty

hires, with recruitment prioritizing professionals who can bridge theoretical foundations with practical applications across various industries.

The curriculum was developed in consultation with data science and AI industry advisors, other Schools in UMGC, and the CIT Advisory Board to ensure alignment with employer needs and industry standards. Program learning goals were developed with UMGC's Integrative Learning Design unit to ensure they meet UMGC's institutional learning goals and academic standards.

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

The MS in Applied AI is designed to equip graduate learners with both essential technical AI foundations and specialized application skills. The program balances theoretical knowledge with practical implementation through its fully online asynchronous delivery modality, which is specifically designed to accommodate working professionals.

The program's objectives and learning outcomes reflect the interdisciplinary nature of AI applications across various sectors, with a particular focus on ethical considerations and practical implementation. The program has established the following learning goals:

1. Analyze the foundational concepts and principles of data-driven AI in the context of real-world applications and case studies.
2. Evaluate the potential applications and implications of AI in various industries, identifying strategic opportunities and risks.
3. Design and implement appropriate data, technology and AI-driven processes and techniques to extract insights from data, address business challenges and achieve desired outcomes.
4. Analyze the ethical, global and human-centered implications of AI technologies to promote responsible design, development and use.
5. Develop specialized knowledge, skills and capabilities regarding artificial intelligence in the chosen elective courses, with the ability to apply these AI techniques to real-world challenges.
6. Communicate clearly in various forms, meeting expectations for content, purpose, organization, audience, and format.

The curriculum is structured in two main components: a 9-credit AI foundational core (resulting in an AI Badge), and 21 credits of elective courses which address the application of AI in two proposed elective areas: Computer Vision / Natural Language Processing, and AI & Cybersecurity. The elective courses include (i) those which provide essential background knowledge of the proposed application areas, (ii) those which discuss how AI can be applied effectively in the two specialization areas, and (iii) a capstone course within each elective area, for students to demonstrate mastery in applying AI-based solutions to real-world problems.

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 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 courses to ensure that each course contributes to the program learning goals without unnecessary duplication of outcomes across courses. Through these mappings, 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), Portfolio 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 five years. After this initial review, programs continue the annual review cycle every year with an Academic Program Review every seven years. Summaries and results from each five-year and seven-year program review are submitted to the University System of Maryland in accordance with their established review cycle.

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 LEO learning management system to allow student work to be duplicated from LEO into AEFIS for assessment purposes. This process ensures that assessment review is independent of grades and evaluation within individual courses and allows for independent review of student work apart from the classroom faculty. AEFIS also houses all 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.**

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

The MS in Applied AI is a comprehensive 30-credit program structured as a stackable credential pathway. The program follows a carefully designed sequence that allows students to build expertise progressively while earning credentials at key milestones along their educational journey.

The curriculum begins with three foundational AI courses (9 credits), consisting of:

- Introduction to AI (ARIN 610)
- AI Ethics (ARIN 615)
- Contemporary Topics in AI (ARIN 620).

These foundational courses require no prerequisites and collectively result in an AI Badge credential, providing students with the essential knowledge needed to complete the specialization courses.

Learners will then select one of two 21-credit elective areas: Computer Vision & Natural Language Processing OR AI and Cybersecurity. Each elective area will include the following types of courses: those that provide the background needed in that area (Computer Vision & Natural Language Processing, OR Cybersecurity), those which discuss how AI can be effectively applied to that area, and a capstone course in which the student can demonstrate their mastery in the application of AI to each of the two elective areas.

The courses which comprise the elective areas are primarily existing courses, but a few courses will be newly developed for this program.

Elective Courses for Computer Vision & Natural Language Processing (21 Credits):

- DATA 605 Decision Analytics
- DATA 635 Data Management
- DATA 645 Machine Learning
- ARIN 655 Deep Learning & Neural Networks
- DATA 660 Advanced Machine Learning
- ARIN 665 Computer Vision & NLP
- ARIN 690A Natural Language Processing and Computer Vision Capstone

Elective Courses for AI & Cybersecurity (21 Credits):

- DATA 645 Machine Learning
- CYOP 605 Introduction to Cyber Operations
- CLCS 645 Cloud Infrastructure Planning and Design
- ARIN 655 Deep Learning & Neural Networks
- CYOP 655 AI-Enabled Cyber Operations
- CLCS 660 AI-Based Cloud Automation and Scripting
- ARIN 690B AI-Cyber Capstone

All courses are delivered in an 8-week, fully online asynchronous format designed to accommodate working professionals. The program can typically be completed in 10 sessions (approximately 5 semesters) if taking one course per session, with the option to accelerate completion by taking two courses simultaneously when feasible.

Table 10: Course Descriptions

ARIN 610 - Introduction to AI (3 credits)
A comprehensive introduction to the foundational principles, terminology, and concepts of artificial intelligence (AI). Designed for students from diverse backgrounds with emphasis on the knowledge and skills needed to understand, evaluate, and collaborate effectively on AI initiatives within an organization. Topics include machine learning, deep learning, foundation models, and generative AI as well as their applications in different domain areas.

ARIN 615 – AI Ethics (3 credits)
An overview of current ethical issues in artificial intelligence (AI) and data science arising throughout the analytics life cycle. The goal is to create ethically driven and responsible AI solutions that enhance human problem-solving and decision-making, identify the sources of bias and discrimination in machine learning, and build models that promote trust in data. Topics include established and emerging guiding principles for AI ethics, such as explainability, fairness, robustness, transparency, accountability, inclusiveness, and privacy.
ARIN 620 – Contemporary Topics in AI (3 credits)
A project-based study of cutting-edge concepts, tools, and techniques in the rapidly evolving field of artificial intelligence. Designed to keep pace with current developments, explores a curated set of contemporary topics that reflect the latest trends and innovations in AI. Emphasis is on hands-on projects for real-world applications, responsible development, and interdisciplinary use cases across industries. Topics include generative AI, foundation models, multimodal learning, AI ethics and governance, autonomous systems, edge AI, and advancements in natural language processing and computer vision.
ARIN 655 – Deep Learning & Neural Networks (3 credits)
Prerequisite: DATA 645. A practical exploration of the fundamental concepts, architectures, and applications of deep learning in the field of artificial intelligence. The goal is to develop deep learning models and apply them to solve real-world problems in a wide range of domains, such as healthcare, finance, marketing, and cybersecurity. Topics include backpropagation, convolutional networks, recurrent networks, and generative adversarial networks, and their applications.
ARIN 665 Computer Vision & NLP (3 credits)
Prerequisite or corequisite: ARIN 655.A comprehensive overview of artificial intelligence with a specific focus on Natural Language Processing (NLP), Computer Vision, Recommender Systems, and Anomaly Detection. The aim is to develop AI applications relevant to real-world scenarios in multiple disciplines and domains. Topics include text and images classification, sentiment analysis, natural language and image generation, and content-based filtering. Discussions explore fraud detection, network intrusion detection, and system health monitoring.
ARIN 690A Natural Language Processing and Computer Vision Capstone (3 credits)
A project based, practical application of the knowledge, technical skills, and critical thinking skills acquired during previous study designed to showcase the student's expertise in artificial intelligence focusing on the application of natural language processing and computer vision. Topics are selected from student-affiliated organizations or employers, special government/private agency requests, or other faculty-approved sources in a wide range of domains.
ARIN 690B AI-Cyber Capstone (3 credits)
A comprehensive, project-driven exploration of artificial intelligence applications in cybersecurity. Students will integrate knowledge from across the specialization to address real-world challenges, demonstrating their ability to apply AI techniques to enhance the security of information systems and to safeguard AI-driven systems themselves. Emphasis is placed on practical implementation, critical thinking, and aligning solutions with organizational security needs and objectives
DATA 605 Decision Analytics (3 credits)
A project-driven study of the processes and technology designed to enhance data-driven decision-making, integrating artificial intelligence with human decision-making. The goal is to apply creative methods to ask better questions, identify core problems, develop models, interpret results, and convey findings to various audiences. Topics include the use of commercial software to manage, analyze, and report on data and create actionable insights across a range of contexts, including societal, business, political, intelligence, healthcare, and media/entertainment. Discussions explore best practices for the long-term success of an analytics project in terms of project management and communications, with an emphasis on the analytics life cycle.
DATA 635 Data Management (3 credits)

A project-based study of the concepts, principles, and techniques of managing data throughout its life cycle for effective data-driven decision-making. The aim is to apply best practices for data design, data integrity, data quality, and data governance. Topics include SQL and NoSQL; distributed and cloud databases; data lakes and data warehousing; extract, transform, and load (ETL) processing; and metadata management. Students may receive credit for only one of the following courses: DATA 620 or DATA 635.

DATA 645 Machine Learning (3 credits)

A project-based study of the fundamental concepts and algorithms of machine learning. The aim is to evaluate different algorithms and methods and build models that learn from past data to find underlying patterns useful for prediction, classification, and exploratory data analysis and that can be applied to make informed business decisions. Topics include supervised and unsupervised machine learning techniques, naïve Bayes classifiers, regression, decision trees, and cluster analysis. Discussion explores significant tasks in real-world applications, including handling missing data, evaluating classifiers, and measuring precision. Major software tools are used to apply machine learning methods in a wide range of domains, such as healthcare, finance, marketing, and government.

DATA 660 Advanced Machine Learning (3 credits)

Prerequisite: DATA 645. A project-based study of advanced concepts in predictive modeling and techniques to discover patterns in data. The aim is to identify variables with the most predictive power and to develop, assess, compare, and explain complex predictive models. Topics include advanced statistical and machine learning algorithms, support vector machines (SVM), ensemble models, and reinforcement learning. Discussion explores high-performance modeling and best practices for selecting methods and tools to explore large data sets using industry-standard software and cloud applications, such as Apache Spark ML, Amazon Kinesis, and Google BigQuery.

CYOP 605 Introduction to Cyber Operations (3 credits)

A hands-on introduction to the strategies, principles, and technologies essential to defending modern networks and information systems. The objective is to evaluate and maintain systems that are resilient and trustworthy in a dynamic threat landscape and to meet specific mission security objectives. An overview of cyber defense is provided. Topics include fundamental principles of cybersecurity and vulnerabilities and risk management of information systems. Students may receive credit for only one of the following courses: COP 610 or CYOP 605.

CYOP 655 AI-Enabled Cyber Operations (3 credits)

A hands-on introduction to the integration of artificial intelligence (AI) in cyber operations to enhance both defensive and offensive cybersecurity processes. The aim is to demonstrate expertise in using AI tools and techniques to identify vulnerabilities, analyze threats, and mitigate risks. Discussion covers the technical, ethical, and legal dimensions of AI-driven cybersecurity, including the automation of threat detection, response, and anomaly analysis within a security operations center (SOC) environment. The emphasis is on the development of practical skills in implementing secure network protocols, conducting compliance checks, and utilizing AI to automate tasks, such as log analysis, threat intelligence, and risk management. Topics also include the impact of AI on cyber threat intelligence; vulnerability identification; and the development of offensive and defensive tactics, techniques, and procedures (TTPs), as well as the implications of cloud computing environments on AI-enabled cyber operations. Students may receive credit for only one of the following courses: COP 630 or CYOP 655

CLCS 645 Cloud Infrastructure Planning and Design (3 credits)

A comprehensive exploration of the principles, methodologies and best practices of planning and designing cloud-based infrastructure. Discussion covers the factors influencing cloud infrastructure decisions, including scalability, performance, cost-effectiveness, security, and reliability. Topics also include cloud architecture patterns, capacity planning, disaster recovery, and compliance frameworks. Hands-on exercises and experience with cloud infrastructure tools reinforce theoretical concepts and provide preparation for real-world challenges. Students may receive credit for only one of the following courses: CLCS 645 or CCS 630.

CLCS 660 AI-Based Cloud Automation and Scripting (3 credits)

Prerequisite: CLCS 645. A study of the automation of cloud infrastructure and processes using scripting languages. The objective is to leverage scripting to streamline tasks, improve efficiency, and reduce manual

errors. Topics include popular scripting languages (e.g., Python, Bash), cloud APIs (Application Programming Interfaces), AI, and automation tools. Hands-on labs provide practical experience in automating cloud resource provisioning, configuration management, and deployment pipelines. Students may receive credit for only one of the following courses: CLCS 660 or CCS 640

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

Not Applicable

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

Not Applicable

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, 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 public website that houses all current information about its programs. Students have online access to degree requirements, course catalogs, course schedules, and other pertinent information. The website also provides specific and clear information and resources about **technology requirements** for UMGC students, **information and training on the learning management system**, and **other additional resources** to maximize each student's learning experience. A variety of online support services are available to students for academic assistance (**Tutoring**, **Writing Center**), as well as **advising**, **accessibility accommodations**, **career services**, **tuition planning**, **financial aid**, and **technical support**.

UMGC's **Student Handbook** is available online and serves as a general guide for all students with respect to policies, procedures, rules, regulations, and general academic requirements for all students. In addition, the annual UMGC **Catalog** includes extensive information about expectations and individual requirements for each academic program as well as university policies, resources, and services for 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 academic program-related communications (including advertising, recruitment, and admission materials) are developed with UMGC-wide institutional communication strategies which adhere to the principle of truth in advertising. All written and electronic materials prepared for prospective students for recruitment will clearly and accurately represent the courses, programs, 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.**

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 faulty member will teach in the proposed program.**

UMGC's faculty staffing model employs full-time faculty (known as Collegiate Faculty) in faculty leadership roles, such as Department Chairs and Portfolio Directors, with responsibility for the overall intellectual coherence and integrity of the curriculum and program. Other Collegiate Faculty teach and serve in complementary roles that maintain and support the academic program, providing input into the design and content of the program and courses. This core group of full-time Collegiate Faculty also mentors and supports the adjunct faculty teaching in the program.

In keeping with UMGC's emphasis on workplace relevance, most faculty teaching in the MS in Applied AI will be credentialed, practicing professionals who teach part-time for UMGC. These adjunct faculty provide instruction for the majority of courses (which is true for all programs at all levels at UMGC). This model is responsible for one of UMGC's greatest strengths: scholar-practitioner faculty who have solid academic credentials and continue to work outside the university, providing 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.

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 an MHEC-approved waiver for the Code of Maryland (COMAR) requirements for total credit hours taught by full-time faculty (see documentation provided in 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.[1]

Consistent with this model, the Information Technology department already has an active roster of faculty who are qualified and prepared to teach courses in this program, and the university constantly recruits additional adjunct faculty as needed. Table 10 below provides a partial list of faculty who are anticipated to teach in the program, their appointment type and rank, their graduate degree(s) and fields(s), their status (full-time or part-time), and the courses they are qualified to teach.

Table 11: Faculty Resources (see next page)

[1] Maryland Higher Education Commission. *2016 Mission Statement Review.* **https://mhec.maryland.gov/institutions_training/Documents/acadaff/2016MissionStatementReview.pdf**

Faculty Name	Appointment Type and Rank	Graduate Degree(s) and Field(s)	Status (FT/PT)	Course(s) to be Taught
Elena Gortcheva	Academic Portfolio Director/Collegiate Professor	PhD, Computer Engineering	FT	DATA 645 ARIN 620, 655, 665, 690A
Kate Goldberg	Collegiate Associate Professor	DBA, Doctor of Business Administration	FT	DATA 605, 635 ARIN 610, 615, 620
Christopher Schultz	Collegiate Professor	PhD, MBA, MS in Applied Computer Science	FT	DATA 605, 645 ARIN 610, 615, 620
Charles Knode	Adjunct Professor	PhD, Industrial Technology	PT	DATA 605, 660 ARIN 615, 620, 690A
Caroline Beam	Adjunct Professor	Ph.D. in Industrial Engineering	PT	DATA 635 ARIN 610, 620
Jon McKeeby	Adjunct Professor	PhD in Computer & Info Science	PT	ARIN 665, 690A/B
Edward Herranz	Adjunct Associate Professor	PhD. Computer Science	PT	DATA 645, 660 ARIN 615, 655,665
Firdu Batti	Adjunct Professor	PhD, Computer Science	PT	DATA 645 ARIN 620, 655, 665
Ami Gates	Adjunct Professor	PhD, Computer Engineering	PT	DATA 645 ARIN 615, 655, 665
Jeremy Bolton	Adjunct Professor	PhD, Computer Engineering	PT	ARIN 615, 620, 655, 665
Solomon Britto	Adjunct Assistant Professor	DBA, Doctor of Business Administration	PT	DATA 605 ARIN 610, 615
Prahlad Gopalakrishna	Adjunct Associate Professor	PhD, Biomedical Engineering	PT	DATA 645 ARIN 615, 620, 655; 690A and B
Chaojie Duan	Adjunct Professor	Doctor in Management	PT	ARIN 615, 620, 655, 665
Goran Trajkovski	Adjunct Associate Professor	PhD, Computer Science	PT	DATA 605, 635 ARIN 610, 615
Matthew Holmes	Adjunct Associate Professor	PhD in Electrical Engineering	PT	DATA 635 ARIN 610, 615
Brian Holbert	Adjunct Professor	PhD Computer Science	PT	DATA 645, ARIN 615, 620, 655
Sounak Chakraborty	Adjunct Professor	PhD Statistics	PT	DATA 660 ARIN 615, 655

Sze Wing Wong	Adjunct Associate Professor	PhD, Computer Science	PT	DATA 635, ARIN 610
Christopher Wrightson	Adjunct Assistant Professor	PhD, Education	PT	DATA 635 ARIN 615, 620
Jason Pittman	Collegiate Faculty	D.Sc. Cybersecurity	FT	ARIN 690B
Rony Thakur	Portfolio Director	PhD Computer Science	FT	ARIN 690B
Jimmy Robertson	Portfolio Director	EdD Distance Education, MS EO Engineering	FT	CYOP 605, CYOP 655, ARIN 690B, CLCS 660
Alla Webb	Adjunct Assistant Professor	PhD Systems Engineering	PT	CYOP 605, CYOP 655, ARIN 690B, CLCS 660
Jamy Klien	Adjunct Assistant Professor	MS Information Science	PT	CYOP 605, CYOP 655, ARIN 690B, CLCS 660
Patrick Appiah-Kubi	Portfolio Director	PhD Computer Science	FT	CLCS 645, ARIN 690B
Alan Carswell	Adjunct Professor	PhD Computer Science	PT	CLCS 645, ARIN 690B
Charles Heinen	Adjunct Assistant Professor	MS Cyber Policy	PT	CYOP 605, CYOP 655, CLSC 660
Jason Cohen	Adjunct Associate Professor	PhD Information Technology	PT	CYOP 605, CYOP 655, CLSC 660

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

Through Faculty Development, part of the university's Integrative Learning Design unit, UMGC supports its worldwide faculty by providing quality professional development programs and services that are accessible, responsive, comprehensive, and innovative. UMGC provides frequent faculty development workshops and webinars focused on effective online pedagogy, including topics such as providing effective feedback; scaffolding student learning; digital literacy; academic integrity; classroom assessment techniques; accessibility; and diversity, equity, and inclusion in the classroom.

UMGC is committed to providing pedagogy training in support of student learning throughout the faculty life cycle with the institution. FACDEV 411, New Faculty Academic Orientation, is a required

two-week, facilitated online class that is designed to welcome new faculty to UMGC and provide information about UMGC's history, mission, values, and students, while preparing faculty to teach online. It is taught by experienced UMGC adjunct faculty. The course covers the history of UMGC, pedagogy of adult learning, facilitating online learning, accessibility, and providing additional support and resources for students through UMGC's Library, Effective Writing Center, Office of Academic Integrity & Accountability, and Office of Accessibility Services.

b) The learning management system

UMGC provides multiple touchpoints to ensure faculty have a thorough orientation to and continued education about our learning management system, Desire2Learn (D2L). Building on the topics and materials provided in FACDEV 411, UMGC offers online faculty workshops on topics such as grading and coaching strategies; the integration of audio and video feedback to students; gradebook setup and rubrics; crafting powerful online introductions; and open education resources (OERs) used in the classroom.

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

In addition to the strategies outlined above, UMGC has recognized the need to equip faculty more comprehensively with knowledge and skills to help increase classroom engagement and support student learning, satisfaction, and retention. In 2021, UMGC launched an additional two-week facilitated training course, FACDEV 112, Coaching Learning and Academic Success Strategies. This course focuses on the development of faculty coaching skills to create an active and motivating presence in the online classroom and to establish helpful and supportive relationships with students, leading to persistence and academic success. To date, over 2,000 UMGC faculty have completed this course.

This addition to UMGC's training catalog is designed to help reduce the distance between faculty and students inherent in online courses. Developed and taught by UMGC faculty, FACDEV 112 emphasizes specific strategies for facilitating consistent and meaningful faculty-student interactions and provides guidance for implementing personalized and actionable academic 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 MS in Applied AI. In partnership with faculty and program designers, the **UMGC Library** annually reviews and maintains a curated collection of academic and professional journal articles, reports, case studies, and books available electronically via a comprehensive set of online library databases to support academic programs. A librarian liaison is designated for each academic department at UMGC to assist faculty with resource identification and other program needs.

The UMGC Library relies on distributed technology as its primary mechanism to provide online access to resources and services to UMGC's widely dispersed adult student population. Library services to all UMGC students, faculty, and staff worldwide include 24/7 reference via live chat and document delivery for materials not otherwise available in the library databases. UMGC's

expanding collection of over 75,000 electronic books (e-books) has significantly increased the ability to meet the academic needs of UMGC's global population. Additionally, UMGC students, faculty, and staff within the continental United States have access to more than 10 million volumes in print from the 17-member **University System of Maryland and Affiliated Institutions (USMAI) Library Consortium**.

The UMGC Library provides research assistance in developing search strategies, selecting relevant databases, and evaluating and citing sources in a variety of formats, including online webinars offered globally. A discovery tool allows simultaneous searching of scholarly articles, books, and other research resources via a single search engine of most of the databases to which the UMGC Library subscribes. Students also have access to full-text dissertations and theses via the *ProQuest Dissertations and Theses* database. Resources on the UMGC Library website provide a list of resource guides for academic subject areas and topics, including relevant databases, websites, books, and other resources along with technical and citation assistance.

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 MS in Applied AI will be offered fully online using the university's distance education platform. Select courses may be taught in a hybrid format at locations where UMGC offers classroom instruction, including regional higher education centers, military bases, and overseas in Europe and Asia. Existing resources related to facilities, infrastructure, and equipment are adequate to meet the program's needs.

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 students and 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 communications with the university. Faculty are required to use their UMGC address for teaching and all official UMGC communications.

UMGC's learning management system is Desire2Learn (D2L); the internal adaptation is called LEO. All UMGC classes are taught using this system and all 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 resources on UMGC's website.

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.**

As shown in Table 12 below, the MS in Applied AI is expected to be self-supporting from inception. No new General Funds are required for the implementation of this program. If necessary, resources will be reallocated internally within the department during the first year.

The credit hour tuition rate listed is a weighted average of in-state, out-of-state, and military graduate tuition rates, based on the anticipated makeup of the student cohorts. Consistent with UMGC's demographics and student enrollment patterns, Table 12 assumes that all students will be enrolled part-time, completing an average of 6.76 credits per year. Enrollment and revenue projections are based on new students entering the program.

Table 12: Resources (MHEC Table 1)

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)	$254,829	$692,108	$1,187,905	$1,616,880	$1,847,336
a. Number of F/T Students	0	0	0	0	0
b. Annual Tuition/Fee Rate	$0	$0	$0	$0	$0
c. Total F/T Revenue (a x b)	$0	$0	$0	$0	$0
d. Number of P/T Students	90	196	310	439	476
e. Credit Hour Rate	$524	$524	$524	$524	$524
f. Annual Credit Hour Rate	5.4	6.7	7.3	7.0	7.4
g. Total P/T Revenue (d x e x f)	$254,829	$692,108	$1,187,905	$1,616,880	$1,847,336
3. Grants, Contracts & Other External Sources	0	0	0	0	0
4. Other Sources	0	0	0	0	0
TOTAL (Add 1 - 4)	$254,829	$692,108	$1,187,905	$1,616,880	$1,847,336

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.**

UMGC's existing base of FTE faculty and administrative and support staff will support and serve the program. The faculty category in Table 13 includes 1 full-time Collegiate Faculty beginning in year 2 and a second full-time Collegiate Faculty beginning in year 3. Adjunct faculty will teach the remaining scheduled courses, with 1 FTE = 30 adjunct-taught credit hours. The adjunct per credit hour rate is calculated at $1,202 per credit, the rate for an associate professor with a terminal degree at longevity Step 1 in UMGC's adjunct faculty pay scale. This is the median rate for faculty anticipated to be in the pool of faculty eligible to teach courses in the program. The administrative staff category includes a portfolio director who will support this program in addition to UMGC's BS in Artificial Intelligence program, while the support staff category factors in support from the Faculty Affairs and Scheduling Team and dean's office staff. Salaries are shown with benefits at current standard rates of 37% for full-time faculty and administrative staff and 8% for adjunct faculty.

Technology services in Row 4 include UMGC's LMS platform licensing, student information system, student relationship management system, and student software and support, at a rate of $5.50/student credit hour. Library services are estimated at a cost of $2.14 per student credit hour. No new or renovated physical space (6) will be needed for this program. Other expenses (Row 7) in year 1 include $288,000 of course development and maintenance to create the new program. The remaining expenses in row 7 include academic administration, admissions, advising and student support services, and marketing and advertising, proportional to the number of credit hours anticipated to be earned by students in the program each year.

Table 13: Program Expenditures (MHEC Table 2)

Expenditure Categories	Year 1	Year 2	Year 3	Year 4	Year 5
1. Faculty (b + c below)	$37,432	$135,629	$239,699	$304,295	$345,926
a. Number of FTE	1.04	3.05	5.29	7.05	8.04
b. Total Salary	$34,659	$118,926	$209,163	$268,664	$305,686
c. Total Benefits	$2,773	$16,704	$30,536	$35,631	$40,239
2. Admin. Staff (b + c below)	$48,819	$39,809	$38,213	$39,141	$43,700
a. Number of FTE	0.42	0.34	0.33	0.34	0.38
b. Total Salary	$35,634	$29,058	$27,893	$28,570	$31,898
c. Total Benefits	$13,185	$10,751	$10,320	$10,571	$11,802

Expenditure Categories	Year 1	Year 2	Year 3	Year 4	Year 5
3. Support Staff (b + c below)	$103,836	$105,913	$108,031	$110,192	$112,396
a. Number of FTE	0.89	0.91	0.93	0.95	0.97
b. Total Salary	$75,793	$77,309	$78,855	$80,432	$82,041
c. Total Benefits	$28,043	$28,604	$29,176	$29,760	$30,355
4. Technical Support and Equipment	$2,675	$7,264	$12,468	$16,971	$17,782
5. Library	$1,043	$2,832	$4,861	$6,617	$7,560
6. New or Renovated Space	0	0	0	0	0
7. Other Expenses	$288,000	$177,105	$378,139	$551,886	$581,469
TOTAL (Add 1 – 7)	**$481,805**	**$468,553**	**$781,411**	**$1,029,101**	**$1,108,832**

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 developed an annual program review process that includes assessment of student learning, as described earlier, along with non-direct measures of student learning including course evaluations, retention and graduation rates, and program surveys administered in all capstone courses. As part of this process, external data are collected, including enrollment in related programs at other institutions and employment trends in relevant labor markets. UMGC's mission for career relevant education requires that the curriculum and program learning goals are maintained in the context of changing needs in labor markets and required skills for graduates.

As part of UMGC's annual program review, courses within the program portfolio are evaluated for course health. This includes student success rates within each course and course reenrollment rates (i.e., how many students in the course reenroll at the university 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 let program leaders and faculty evaluate the course curriculum's effectiveness and delivery. When a course is scheduled for revision, all adjunct faculty teaching the course are surveyed to provide input to the faculty and instructional designers revising the course.

Full-time faculty are reviewed at least every two years. Adjunct faculty are reviewed on a course-by-course/term basis. Student course evaluations allow all faculty to receive 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.

UMGC's faculty, academic administrators, and Office of Academic Quality collaborate to implement assessment activities, monitor ongoing developments, review results, and make appropriate curricular or other modifications. Annually, student performance across learning demonstrations is evaluated to determine where improvements may be required. Portfolio Directors and Collegiate Faculty visit online classrooms regularly to track faculty performance and take any necessary corrective actions proactively. Class observations are documented and used in subsequent faculty staffing decisions. Changes are also made to the curriculum and/or student support models, as needed. 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 program infrastructure and resources. These processes all support a continuous cycle of improvement.

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 communities we serve. Cultural differences are recognized, valued, and considered essential to the educational process. Our welcoming of diverse perspectives differentiates us and drives innovation. 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, faculty, and staff and our proven record of providing higher education access to underrepresented students. UMGC's Integrative Learning Design unit and Office of Community Engagement and Opportunity collaborate to ensure a robustly inclusive curriculum that is built around UMGC's focus on project-, scenario-, and problem-based learning, which have been found to be the most effective learning approaches for adult students. The Integrative Learning Design team is trained and proficient in Universal Design for Learning and provides leadership on matters of inclusive design for all learning experiences, courses, and programs at 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.

Not Applicable

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.

UMGC is approved to offer distance education by the Middle States Commission on Higher Education (MSCHE) and maintains compliance with COMAR 13B.02.03.22. UMGC's approval to offer distance education as an alternative delivery method is included within its scope of institutional accreditation, as evidenced in the university's MSCHE **Statement of Accreditation Status**. Further,

UMGC has been an approved institutional participant in the State Authorization Reciprocity Agreement (SARA) since 2016 and is authorized to offer distance education in all SARA states. Among its many recognitions, UMGC has 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.

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 was an early provider of off-campus educational opportunities for students and one of the first universities in Maryland to develop fully online courses and programs. UMGC has been a leader among public institutions in providing quality and affordable online education and has been providing distance education to the nation's service members and their families, residents of the State of Maryland, and those who live outside of Maryland for more than 75 years. Additionally, UMGC's Europe and Asia divisions offer hybrid and onsite classes to fulfill DOD contract requirements and meet the needs of military-affiliated learners overseas. Stateside, all onsite classes, with the exception of an occasional accelerated offering, are offered in hybrid format, blending onsite and online delivery.

UMGC's distance education offerings are in full compliance with **C-RAC's 2011 Guidelines**.

Appendix A
Full-Time Faculty and Library Waiver

90.2.1.001

cc: LEL
Bob S.

MHEC
Creating a state of achievement

MEMORANDUM

DATE: January 6, 2005

Office of the Provost
UMUC
JAN 10 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

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 Faulty 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

MARYLAND HIGHER EDUCATION COMMISSION
839 Bestgate Rd. • Suite 400 • Annapolis, MD 21401-3013
T 410.260.4500 • 800.974.0203 • F 410.260.3200 • TTY for the Deaf 800.735.2258 • www.mhec.state.md.us

xc: on file

Forward to Miriam for appropriate action via Com. on Ed Policy

RECEIVED
APR 30 1996
By VCAA

April 23, 1996

RECEIVED
APR 29 1996
OFFICE OF THE CHANCELLOR
THE UNIVERSITY OF MARYLAND SYSTEM

Parris N. Glendening
Governor

Edward O. Clarke, Jr.
Chairman

Patricia S. Florestano
Secretary of Higher Education

Mr. Lance W. Billingsley, Esq.
Chairman, Board of Regents
University of Maryland System
3300 Metzerott Road
Adelphi, MD 20783

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. (CT)

Edward O. Clarke, Jr.
Chairman

EOC:PSF:JAS:ds

Enclosures

cc: Dr. Patricia S. Florestano
√Dr. Donald N. Langenberg

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