



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

Institution Submitting Proposal	
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Each action below requires a separate proposal and cover sheet.

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

Payment Submitted:	Yes No	Payment Type:	R*STARS # JB037612	Payment Amount:	Date Submitted: 02/01/2024
			Check #		

Department Proposing Program			
Degree Level and Degree Type			
Title of Proposed Program			
Total Number of Credits			
Suggested Codes	HEGIS:	CIP:	
Program Modality	On-campus	Distance Education (fully online)	Both
Program Resources	Using Existing Resources	Requiring New Resources	
Projected Implementation Date <small>(must be 60 days from proposal submission as per COMAR 13B.02.03.03)</small>	Fall	Spring	Summer Year:
Provide Link to Most Recent Academic Catalog	URL:		

Preferred Contact for this Proposal	Name:
	Title:
	Phone:
	Email:

President/Chief Executive	Type Name:
	Signature: Date: 01/16/2024

	Date of Approval/Endorsement by Governing Board:
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UNIVERSITY SYSTEM OF MARYLAND INSTITUTION PROPOSAL FOR

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

The University of Baltimore
Institution Submitting Proposal

MS in Artificial Intelligence for Business
Title of Proposed Program

Master's Degree
Award to be Offered

Fall 2024
Projected Implementation Date

0599.00
Proposed HEGIS Code

52.1399
Proposed CIP Code

Merrick School of Business
Department in which program will be
located

Mikhail Pevzner
Department Contact

410-837-5862
Contact Phone Number

mpevzner@ubalt.edu
Contact E-Mail Address


Signature of President or Designee

2/28/24
Date

A. Centrality to Institutional Mission and Planning Priorities:

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

The University of Baltimore, a Predominantly Black Institution in Maryland, seeks MHEC's authorization to introduce a new program, MS in Artificial Intelligence for Business. Established in 1925, the university has consistently upheld the mission of preparing highly skilled professionals for the state of Maryland with a special emphasis on business education. The Merrick School of Business (MSB) at the University of Baltimore earned AACSB accreditation in 1983 and pioneered the first AACSB-accredited, fully online MBA in the United States.

Today, the University of Baltimore stands as a diverse institution, where African Americans constitute 45% of our student body. An integral aspect of our mission is to equip individuals with exceptional business acumen, particularly for the diverse communities of Baltimore and its surroundings.

In October 2023, President Joe Biden and Secretary of Commerce Gina Raimondo named Baltimore as one of 31 "federal tech hubs," a designation that will prompt tens of millions of dollars in funding across the region as part of a nationwide effort to ensure American competitiveness in various aspects of technology.

As a result of this announcement, Baltimore is expected to become home to major advancements in artificial intelligence (AI) and biotechnology, with an emphasis on the use of data to guide clinical decisions and improve patient outcomes. Our city is now eligible for approximately \$500 million in federal funds for projects within the area over the next five years. According to the Greater Baltimore Committee, the tech hub designation will bring \$3.2 billion in economic impact and 52,000 jobs over the next 5+ years. Thus, training business professionals on how to apply AI, particularly in the biotech industry, is critical to our local economy.

The University of Baltimore's mission statement emphasizes our commitment to providing career-focused education for both aspiring and current professionals. This approach ensures that the region benefits from highly educated leaders who contribute significantly to the broader community. As the landscape of business undergoes a transformative shift due to the advent of AI tools, our proposed program will equip individuals with the essential skills to apply AI techniques effectively in the business sphere.

Recent advancements in AI and, in particular, Generative AI are expected to fundamentally transform business. A recent survey by Amazon Web Services (AWS) indicated that "80% of respondents to the AWS survey said they believe it will transform their organizations, and 64% in the Wavestone survey said it is the most transformational technology in a generation. A large majority of survey takers are also increasing investment in the technology."¹

The envisioned MS in Artificial Intelligence for Business program will thus play a pivotal role in training highly qualified business professionals for the region to meet the significant labor

¹<https://sloanreview.mit.edu/article/five-key-trends-in-ai-and-data-science-for-2024/>

demand expected from this AI transformation. It will achieve this by endowing participants with practical AI and knowledge of how to apply AI in various business fields, skills which are currently in high demand across various industries. This will be accomplished through coursework in the general application of AI in business, ethics and regulation of AI, application of AI in such fields as accounting and finance, marketing, entrepreneurship, organizational behavior and supply chain management.

Our 30-credit AI-focused program provides a swift route for professionals to enhance their skills and progress in the field of business and AI. Our goal is to train professionals who can use AI strategically, across all aspects of business, but also do so while being mindful of ethical and regulatory issues that entail AI implementation in business.

We have observed a growing demand for business professionals who possess robust AI competencies in Maryland. As detailed below, this trend underscores the significance of our MS in Artificial Intelligence for Business program in satisfying the state's need for highly skilled graduates.

The demand for strong applied AI skills within the state is now more pressing than ever. According to The Wall Street Journal, "Generative AI, by some estimates, is poised to double the rate of U.S. productivity growth after a decade of widespread adoption, potentially contributing trillions of dollars annually to global economic output."² According to the consulting firm McKinsey, "Generative AI's impact on productivity could add trillions of dollars in value to the global economy. Our latest research estimates that generative AI could add the equivalent of \$2.6 trillion to \$4.4 trillion annually across the 63 use cases we analyzed—by comparison, the United Kingdom's entire GDP in 2021 was \$3.1 trillion. This would increase the impact of all artificial intelligence by 15 to 40 percent. This estimate would roughly double if we include the impact of embedding generative AI into software that is currently used for other tasks beyond those use cases."³ According to Forbes, "The AI market is projected to reach a staggering \$407 billion by 2027, experiencing substantial growth from its estimated \$86.9 billion revenue in 2022... AI is expected to contribute a significant 21% net increase to the United States GDP by 2030, showcasing its impact on economic growth... A significant 64% of businesses believe that artificial intelligence will help increase their overall productivity, as revealed in a Forbes Advisor survey. This demonstrates the growing confidence in AI's potential to transform business operations."⁴

McKinsey's report⁵ further explains how AI is expected to affect business operations. For example, it will do so through:

- Customer operations: Improving customer and agent experiences
- Marketing and sales: Boosting personalization, content creation, and sales productivity

² <https://www.wsj.com/articles/generative-ai-promises-an-economic-revolution-managing-the-disruption-will-be-crucial-b1c0f054>

³ <https://www.mckinsey.com/capabilities/mckinsey-digital/our-insights/the-economic-potential-of-generative-ai-the-next-productivity-frontier#key-insights>

⁴ https://www.forbes.com/advisor/business/ai-statistics/#sources_section

⁵ <https://www.mckinsey.com/capabilities/mckinsey-digital/our-insights/the-economic-potential-of-generative-ai-the-next-productivity-frontier#industry-impacts>

- Software engineering: Speeding developer work as a coding assistant
- Product R&D: Reducing research and design time, improving simulation and testing

It stands to reason that the wide-spread adoption of the AI in business will be truly transformative of how business will be done in the U.S. and worldwide in the upcoming decades. This underscores the need for a program that will provide the link between AI and business which is what we are trying to create.

Consistent with these staggering expectations, Figure 1, sourced from Stanford University's AI Annual Report, reveals that Maryland witnessed the addition of nearly 17,000 AI-related job openings in 2022. This is consistent with a recent University of Maryland's White Paper reporting that Maryland is one of the States that has the largest gains in AI jobs between 2018 and 2023. In particular, this White Paper reports that "Maryland's share [of AI jobs] increased from 1.51% in 2018 to 2.97% in 2023."⁶ Overall, these statistics are consistent with Visualcapitalist.com's report that in 2022, Maryland ranked 17th in the nation in terms of demand for AI jobs, as shown in Figure 2.

Looking more broadly, the University of Maryland's White Paper cited above reported that "In 2018, the National Capital Region's share of AI job postings (7.54%) was about half that of the region's share of IT job postings (14.05%) and not much more than its share of all job postings (6.36%). By 2023, the picture has been transformed. At 12.63%, the region's share of AI job postings is second only to California's at 19.03%. This share is now at parity to the region's share of IT job postings (12.77%) and more than double that of all job postings (5.83%). The National Capital Region has emerged as the second biggest hub for AI job postings after California."

Anticipating continued growth, the demand for AI professionals is projected to escalate. By some estimates, by 2030, up to 375 million workers will need to retool their skills due to the integration of automation and AI in the workplace. Consequently, we foresee that this seismic shift in how American companies conduct business will create substantial demand for business graduates with a deep understanding of how AI will integrate into various business practices. We thus want to create this program to appropriately prepare the Maryland workforce for this all-encompassing transition.

⁶ UMD-LinkUp AI Maps Project (2024). From West to the Rest: Growing Geographic Dispersion of AI Jobs in America. White Paper #1. University of Maryland.

Figure 1:

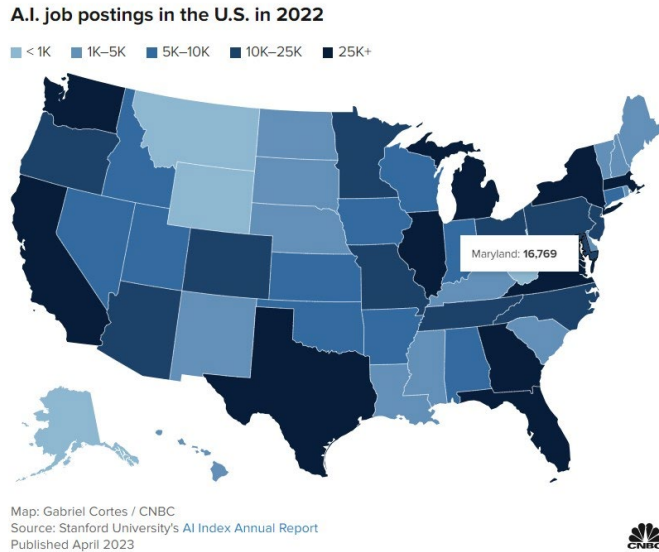


Figure 2:

Search:

Rank	State	Number of job postings	% of total
11	North Carolina	23,854	3.0%
12	New Jersey	23,447	2.9%
13	Colorado	20,421	2.6%
14	Pennsylvania	20,397	2.6%
15	Arizona	19,514	2.5%
16	Ohio	19,208	2.4%
17	Maryland	16,769	2.1%
18	Minnesota	11,808	1.5%
19	Tennessee	11,173	1.4%
20	Missouri	10,990	1.4%

Our faculty members are well-qualified to lead the courses outlined in the program curriculum. The majority of the AI, business, and related courses will be instructed by our faculty, who actively engage in both research and teaching in these areas as part of their standard responsibilities.

Moreover, the applied business electives featured in the program will be delivered by our Merrick School of Business faculty. These dedicated educators have either undergone rigorous training in AI techniques or are currently in the process of acquiring this expertise to enhance their teaching capabilities.

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

The University of Baltimore’s (UBALT) Strategic Goals are:

- Goal 1: Position UBALT as the region’s premier professional, career-focused university
- Goal 2: Strengthen student success
- Goal 3: Solidify UBALT’s commitment to community engagement and service
- Goal 4: Organize for long-term financial stability
- Goal 5: Achieve excellence in research, scholarship, and creative activity
- Goal 6: Strengthen UBALT’s commitment to diversity, equity and inclusion

The program directly aligns with Goals 1, 4, and 6, underscoring the University of Baltimore's commitment to producing highly qualified business professionals. By introducing the MS in Artificial Intelligence for Business program, tailored to meet the demands of a market hungry for professionals adept in AI, business analytics, and general business skills, our institution solidifies its reputation as a premier training ground for exceptional talent.

Furthermore, we are at the forefront of innovation by integrating cutting-edge machine learning and generative AI tools into our business curriculum through this program. This initiative equips our students with the necessary competencies to remain competitive in today's swiftly evolving marketplace. In fact, a recent article in The Wall Street Journal emphasizes the imminent ubiquity of AI-driven tools, underlining the urgency for individuals to adapt or risk falling behind. We are witnessing an increasing reliance on AI-assisted communications, planning, and product development, all of which demand a deep and integrated understanding of AI in business operations.

Additionally, the STEM designation of the program enhances its appeal to international students, contributing to our institution's financial stability and enriching the diversity of our student body. This strategic move aligns with our commitment to global inclusivity and further positions the University of Baltimore as a leader in providing advanced business education.

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

The program, in its current configuration, will be managed by our existing faculty, thereby eliminating the need for additional resources in terms of new faculty hires. Our current faculty members possess the capability to effectively instruct within the program, as we can reassign them from other programs that are experiencing a decreased demand. Furthermore, we are prepared to leverage adjunct faculty members as needed to ensure the program's successful delivery.

Please find detailed financial information in Section L of this proposal, beginning on page 29.

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

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

The program's needs will be met within the capacity of the existing faculty's teaching loads. To the extent necessary, overload compensation will be utilized.

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

We are committed to offering the program as long as reasonably necessary to build sufficient and sustainable enrollments.

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

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

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

The University of Baltimore is a Predominantly-Black, minority-serving Institution with a highly diverse student body in multiple dimensions—racially, economically, and ethnically. Recent news reports suggest that racial minorities and women are disproportionately exposed to AI-related job displacement⁷. Thus, creating this new program to emphasize the role of AI in business should significantly increase access to higher-paying jobs among minority and economically disadvantaged students and thus shield them from the negative consequences of the AI-driven revolution in our economy.

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

The 2022 Maryland State Plan for Postsecondary Education outlines three primary goals for the postsecondary community in Maryland:

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

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

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

⁷ <https://www.nbcnews.com/news/asian-america/asian-american-workers-heavily-affected-ai-rcna98179>

The University of Baltimore is an open-access, minority-serving, Predominantly Black Institution. To our knowledge, currently, there are no similar programs on the role of AI in business in the State of Maryland.

Specifically, the program addresses the Priority 8 *Promote the Culture of Risk Taking* of 2022 Maryland Plan for Higher Education. Specifically, Priority 8 states: “In order to remain one of the leading states in higher education, Maryland will need to be *innovative and agile* to serve the changing student and changing workforce... Innovations should be centered on *solving problems and providing new opportunities*. The challenge, of course, is to identify the problem. Additionally, it is essential that an equity framework or lens is adopted when implementing innovative solutions and opportunities. The use of metrics that establish the problem can help identify solutions and help schools, colleges, universities, and organizations more readily consider innovative solutions.” (emphasis added). The program is focused on a new and emerging field of AI which is bound to significantly change how companies will do business in the foreseeable future.

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.

We expect our graduates to be employed in a variety of industries as AI product managers, prompt engineers, AI product strategists and analysts, AI consultants, AI data analysts and financial systems analysts, and intelligence analysts.

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

According to Stanford University’s 2023 Artificial Intelligence Index Report, “Across every sector in the United States for which there is data (with the exception of agriculture, forestry, fishing, and hunting), the number of AI-related job postings has increased on average from 1.7% in 2021 to 1.9% in 2022. Employers in the United States are increasingly looking for workers with AI-related skills” (page 170, emphasis added).

The Report further discusses AI-skills penetration. “The AI skill penetration rate is a metric created by LinkedIn that measures the prevalence of various AI-related skills across occupations...”.

Figure 3 below from the Report illustrates that the U.S. has some of the highest AI-job-posting levels in the world.

Figure 3:

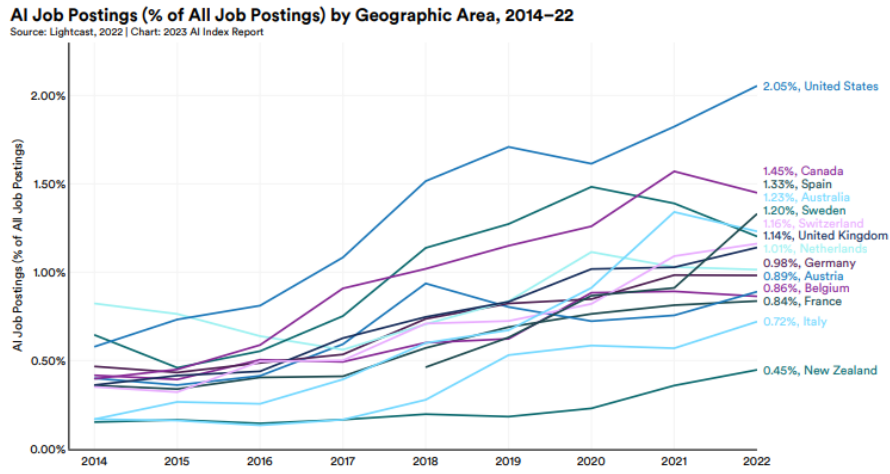
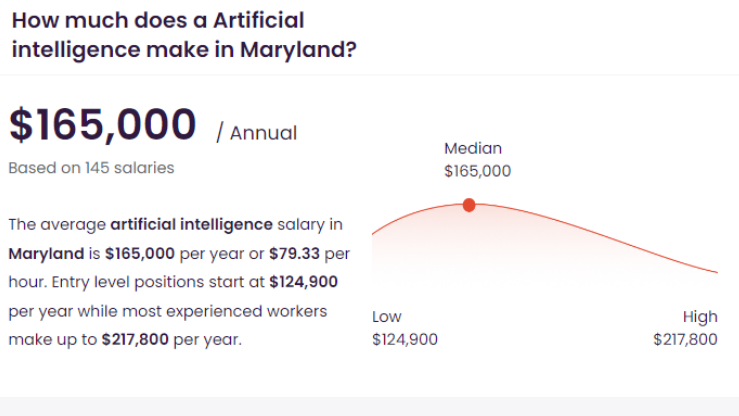


Figure 4.1.1

Taken together, this suggests that the nationwide AI-related employer demand will remain strong in the future.

As this is an emerging area of employment, there is currently no official data on the projected demand in AI jobs from the State of Maryland beyond an estimate of approximately 17,000 jobs from Stanford University’s Report we identify above. As of this writing, there are 1,310 AI-related job postings in Maryland on Indeed.com and 922 such job postings on Simplyhired.com. According to Talent.com, the average AI-related salary in MD is \$165,000 (Figure 4). Given that the current demand for AI-jobs in Maryland appears to be stronger than many other states, we expect that the growth in AI-related jobs in Maryland will mirror national trends.

Figure 4:



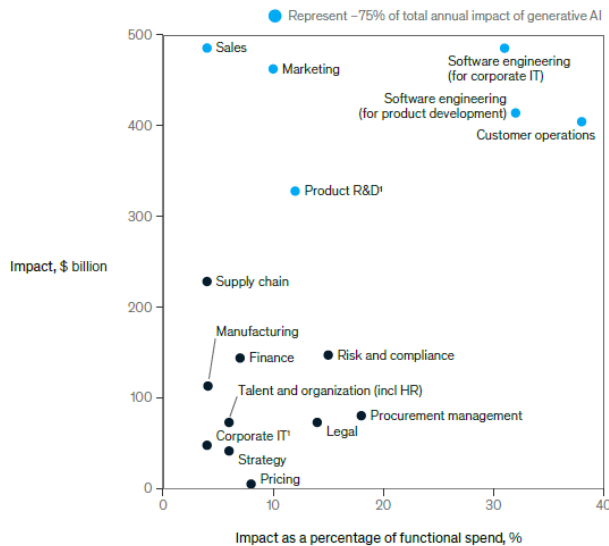
2. Discuss and provide evidence of market surveys that clearly provide quantifiable and reliable data on the educational and training needs and the anticipated number of vacancies expected over the next 5 years.

Forbes indicates that “AI continues to revolutionize various industries, with an expected annual growth rate of 37.3% between 2023 and 2030, as reported by Grand View Research. This rapid growth emphasizes the increasing impact of AI technologies in the coming years.”⁸ An article in Onhires.com states that “...the demand for AI specialists is believed to steadily grow in the coming years, with a projected growth rate of 40% in the AI workforce from 2023 to 2025, according to the World Economic Forum’s report. The number of AI-related job openings will reach an estimated 97 million new jobs created by 2025. The same report also claims that the share of jobs requiring AI skills will increase by 58%.”⁹ Because Maryland is a home for many IT firms and government contractors that will likely adopt AI technology more quickly, we expect this trend to be consistent, if not stronger, in Maryland.

Figure 5 below from the McKinsey Report on the economic potential of Generative AI summarizes the expected impact of Generative AI adoption in various business fields indicating high demand for professionals that understand how AI will affect various aspects of business.

Figure 5¹⁰:

Using generative AI in just a few functions could drive most of the technology’s impact across potential corporate use cases.



Note: Impact is averaged.
*Excluding software engineering.
Source: Comparative Industry Service (CIS), IHS Markit; Oxford Economics; McKinsey Corporate and Business Functions database; McKinsey Manufacturing and Supply Chain 360; McKinsey Sales Navigator; Ignite, a McKinsey database; McKinsey analysis

⁸ https://www.forbes.com/advisor/business/ai-statistics/#sources_section

⁹ <https://www.onhires.com/blog-post/statistics-and-forecasts-for-recruiting-in-ai#:~:text=The%20same%20report%20also%20claims,28.4%25%20from%202018%20to%202023>

¹⁰ Source: The Economic Potential of Integrative AI, McKinsey and Company, June 2023, <https://www.mckinsey.com/capabilities/mckinsey-digital/our-insights/the-economic-potential-of-generative-ai-the-next-productivity-frontier>

State of Maryland employment projections currently do not specifically forecast AI or AI-related job demand. However, it does provide data on the demand for data science and computer-related occupations¹¹ It is reasonable to expect that the AI-job demand is correlated with data science and computer-related jobs. This is because AI-jobs are “generated” as a result of the work of data scientists and others in the computer-related industries.

Table 1:

Occupational Title	Employment			
	2020	2030	Change	% Chg
Database Administrators and Architects	5,117	5,615	498	9.7%
Data Scientists and Mathematical Science Occupations, All Other	2,334	3,045	711	30.5%
Computer and Information Systems Managers	13,771	15,402	1,631	11.8%
Computer and Mathematical Occupations	165,712	192,508	26,796	16.2%
Computer Occupations	155,003	178,976	23,973	15.5%
Computer Systems Analysts	18,870	21,063	2,193	11.6%
Information Security Analysts	8,337	11,396	3,059	36.7%
Computer and Information Research Scientists	2,813	3,285	472	16.8%
Computer Network Support Specialists	8,009	8,910	901	11.3%
Computer User Support Specialists	13,649	15,499	1,850	13.6%
Computer Network Architects	8,030	8,848	818	10.2%

As can be seen from Table 1, data science and related computer occupations are expected to have robust double-digit growth in the next 6 years in Maryland with data science jobs exhibiting growth in excess of 30%. This is consistent with the nation-wide expectations of data science job growth of 35% through 2032¹². This is also consistent with the expected worldwide AI-related job growth of 97 million additional jobs¹³.

It should also be noted that it is broadly expected that as AI is further integrated into business, new jobs and occupations will be created. For example, it is reasonable to expect that there will be a demand for professionals specifically involved in management of AI in business. As our program focuses on application of AI in various business fields, our students will develop knowledge and skills related to (a) identifying and understanding how AI can add value to specific business functions; (b) selecting the appropriate AI tools to address the problems or opportunities involved; and (c) planning and managing the implementation of integrating the AI into business processes. For example, our program incorporates a course on the application of AI in human resource management (Applications of Artificial Intelligence for Human Resources

¹¹ <https://www.dlrr.state.md.us/lmi/iandoproj/occupationalprojections.xls>

¹² <https://www.bls.gov/ooh/math/data-scientists.htm>

¹³ <https://edisonandblack.com/pages/over-97-million-jobs-set-to-be-created-by-ai.html#:~:text=AI%20Job%20Boom%3F,million%20new%20jobs%20by%202025.>

and General Management); students in this course will benefit from understanding how AI can affect interactions within business teams. Similarly, AI is widely expected to affect the marketing field. Our Program’s students who take Applications of AI in Marketing course will be able to better take advantage of those opportunities.¹⁴

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

The proposed program is unique, particularly within the state of Maryland. As such, there is no current or projected supply of graduates within this area of study.

D. Reasonableness of Program Duplication:

D.1. Programs with the Same CIP Code 52.1399

MHEC has indicated that one area of particular program duplication scrutiny is the programs with the same CIP code. Thus, we begin by comparing our proposed Master of Science Program to the existing Master’s and Post-Baccalaureate Certificate programs with CIP code 52.1399 in MHEC Program Inventory. Table 2 below summarizes the programs in Maryland that have the same CIP code 52.1399. As can be seen, with the exception of Johns Hopkins MS in Business Analytics and Risk Management, which is further discussed in Table 3, none of the programs in this CIP code emphasize either data analytics or artificial intelligence, and as such our proposed program is not duplicative with respect to these other programs.

Table 2: Maryland Programs with CIP Code 52.1399¹⁵

Institution	Program	Degree Type	HEGIS Code
Johns Hopkins University	BUSINESS ANALYTICS & RISK MNGT	Master’s Degree	50603
Johns Hopkins University	BUSINESS ANALYTICS AND RISK MANAGEMENT	Post-Baccalaureate Certificate ¹⁶	50603
Towson University	SUPPLY CHAIN MANAGEMENT	Master’s Degree and Post-Baccalaureate Certificate	50602
Towson University	MARKETING INTELLIGENCE	Master's Degree	50900
Towson University	INTERACTIVE MARKETING	Post-Baccalaureate Certificate	50900
Towson University	INTERACTIVE MARKETING	Post-Baccalaureate Certificate	50901
Towson University	SUPPLY CHAIN MANAGEMENT	Post-Baccalaureate Certificate	50602
Univ. of Maryland, College Park	SUPPLY CHAIN MANAGEMENT	Master's Degree	51000
Univ. of Maryland, College Park	ACCOUNTING	Master's Degree	50200

¹⁴<https://www.qortex.ai/blog/how-ai-is-affecting-the-job-market-in-marketing-advertising>

¹⁵ Source: MHEC Program Inventory

¹⁶ This program appears to be inactive, as it is not shown on JHU catalog website: <https://e-catalogue.jhu.edu/business/degrees-certificates/>

D.2. Analysis of the Other Potentially Similar Programs

While there are *technical (i.e., focused on computer science)* AI programs in Maryland (which are described in Table 3 below), to our knowledge, there are currently no similar *AI business application* programs in Maryland. There are, however, programs in the adjacent fields such as data and business analytics. We note that although our program does include data analytics courses as a means of supporting AI and application of AI in business courses, **our program is neither a data or traditional business analytics-focused nor technical (i.e. programming or application development-focused) AI program. Rather, our program emphasizes the interaction between AI and business, and to our knowledge there are no such other programs in Maryland.** In particular, our program emphasizes the study of relevant applications of AI tools to specific business tasks, how to select, plan for, and manage the implementation of such tools into existing organizations. Furthermore, our program emphasizes students' understanding of the ethics and regulation of AI in business. The distinctiveness of our program from the other programs in Maryland is illustrated in Table 3 below. Accordingly, in that Table and notes thereto we discuss AI and data analytics programs that are typically more technical in nature and therefore pose the least program duplication concerns.

Table 3: Other AI, data, and business analytics programs in Maryland

This table summarizes the content of programs in the other institutions that cover technical AI or have a general data analytics focus. Panel A discusses technical AI or AI-related programs in Maryland while Panel B discusses the other data science and related business analytics programs in Maryland that could have an appearance of connection to AI.

Panel A: Programs in Maryland with a technical AI or general data analytics focus

Institution	Program	Program Focus
University of Maryland College Park	Machine Learning Specialization in Combined BS/MS program MS in Data Science MPS in Data Science and Analytics	Technical ¹⁷
Johns Hopkins University	PBC in AI (School of Engineering) MS in Artificial Intelligence	Technical ¹⁸
Johns Hopkins University	MS in Data Science	Technical with AI only being one of several elements of the program. ¹⁹
Morgan State University	MS in Advanced Computing (School of Computer, Mathematical and Natural Sciences).	Technical with AI only being one of several elements of the program ²⁰
Capitol Technology University	PhD in Artificial Intelligence MS in Research (MSRes) in Artificial Intelligence BS in Artificial Intelligence	A technical research doctorate ²¹

¹⁷ <https://undergrad.cs.umd.edu/machine-learning-degree-requirements;>
<https://cmns.umd.edu/graduate/science-academy/data-science/masters;>
<https://academiccatalog.umd.edu/graduate/programs/data-science-analytics-mpda/data-science-analytics-mps/>

¹⁸ [https://ep.jhu.edu/programs/artificial-intelligence/graduate-certificate/;](https://ep.jhu.edu/programs/artificial-intelligence/graduate-certificate/) <https://e-catalogue.jhu.edu/engineering/engineering-professionals/artificial-intelligence/master-of-science/>

¹⁹ <https://ep.jhu.edu/programs/data-science/courses/>
²⁰

https://mhec.maryland.gov/institutions_training/documents/acadaff/acadproginstitapprovals/Proposals/PP20132.pdf

²¹ <https://www.captechu.edu/degrees-and-programs/doctoral-degrees/artificial-intelligence-phd> ;
[https://www.captechu.edu/degrees-and-programs/masters-degrees/artificial-intelligence-mres;](https://www.captechu.edu/degrees-and-programs/masters-degrees/artificial-intelligence-mres)
<https://www.captechu.edu/degrees-and-programs/bachelors-degrees/artificial-intelligence-bs>

Notes to Panel A of Table 3:

AI-related programs at the University of Maryland College Park (UMCP). UMCP does not have a program with AI in its title, but it's a nexus of AI-related research in the State of Maryland whereby it operates a multitude of AI and AI-related initiative on its campus²². UMCP has several graduate programs that are AI-related: the machine learning track in the accelerated five year BS/MS in Computer Science program; MS in Data Science, and MPS in Data Science and Analytics. All these programs have very strong computer science and machine learning focus unlike the UBALT program where the emphasis is on business implementation issues related to AI.

AI programs in Johns Hopkins University (JHU). JHU has two programs that AI-based—MS in Artificial Intelligence and PBC in Artificial Intelligence. MS in Artificial Intelligence consists of 12 credits of required technical computer science and AI courses (coursework in algorithms, applied machine learning, technical AI, and creating of AI-enabled systems; these 12 credits also constitute the PBC in Artificial Intelligence); the students can then also take 18 credits of electives, almost all of which are technical AI or computer science or related courses. Of those electives, only one, Values and Ethics and AI has any resemblance to the business-application AI coursework in the UBALT program. However, a closer look at that course makes it clear that its focus is also technical, with much greater emphasis on technical bias in AI-driven algorithms.

Please refer to Section D.3. for a more in-depth discussion of the offerings of **Morgan State University**.

AI programs in Capital Technology University (CTU). The two graduate CTU programs MSRes in Artificial Intelligence and PhD in Artificial Intelligence have a strong research focus which is very different than the UBALT proposed program that has an applied business focus. On online MSRes in Artificial Intelligence consists of six five-credit courses that cover research design methodologies, research on future design of artificial intelligence, and coursework on actual doctoral research. CTU's Phd in Artificial Intelligence builds on the MSRes program by adding more research method and evolution of AI courses and providing space for doctoral theses credits. Thus, these graduate two programs have no real resemblance to the UBALT program other than the use of the name Artificial Intelligence in title.

Capital Technology University's Bachelor in Artificial Intelligence is a technical computer science-focused program much more similar to JHU's or UMCP programs. Its primary emphasis is on technical computer science, machine learning, technical AI, and mathematics. It requires two business courses focused on introduction to management and project management, respectively which have very minimal overlap with the business application of AI coursework requirements of the UBALT program.

²² <https://research.umd.edu/capabilities/research-areas/ai-and-data-science>

Panel B: Other Programs in Maryland with Potential AI-connection

Institution	Program	Program Focus
Morgan State University	MS in Data Analytics and Visualization (Graves School of Business)	A program with broad focus in data analytics and visualization without specific AI focus ²³ . There is a general business track in the program, but it does not emphasize how AI is used in business (discussed in Section D3 below).
Notre Dame College of MD	MS in Analytics	A technical data analytics program without AI impact
Johns Hopkins University	MS in Business Analytics and Risk Management	Business Analytics program ²⁴ emphasizing the applications of data analytics in various fields of business. The face-to-face modality of the program is offered in Washington DC and as such would not be a competitor in Baltimore market. The program does not have AI-specific content.
McDaniel College	MS in Data Analytics	A technical data analytics program without AI impact
Towson University	MS in Actuarial Science and Predictive Analytics	A technical program focused on actuarial science and its analytics applications.
Loyola University Maryland	MS in Data Science	The program has technical and business analytics specialization (discussed in Section D3 below) without specific AI focus.
University of Maryland Global Campus (UMGC)	MS in Data Analytics (online)	A data analytics focused program with a single machine learning course. No coursework examining the role of AI in business.
University of Maryland Baltimore County (UMBC)	MPS in Data Science	A technical program in data science with several tracks, one of which is management science (discussed in Section D3 below). No courses on application of AI in business are in the program.
Maryland Institute College of Art (MICA)	MPS in Data Analytics and Visualization	A technical program that emphasizes visualization and cognitive perception aspects of data analytics. No AI is included in the program.

²³ <https://www.morgan.edu/information-science-and-systems/academic-programs/graduate/data-analytics-and-visualization>

²⁴ <https://carey.jhu.edu/programs/master-science-programs/ms-business-analytics-risk-management>

Notes to Panel B of Table 3:

As can be seen above, these programs have an emphasis in business analytics or data science without a particular AI-emphasis. As such, there are no potential program duplication issues.

D.3. Discussion of Possible Program Duplication Issues

Our analysis of potential program duplication issues results in the conclusion that our program does not duplicate any existing program offered within Maryland.

In this section, we elaborate on possible duplication issues with respect to the programs in Maryland business schools that have stronger business component than more technical programs listed in Panels A and B in Table 3.

Morgan State University (MSU)'s MS in Data Analytics and Visualization offered through MSU's Graves School of Business.

The original MSU program application states: "This new program is designed for students who have completed a bachelor's degree program and are interested in furthering their careers within their discipline by adding the theory, tools, methodologies, and processes for data analytics and data visualization, which are in high demand. The program will also meet the needs of working professionals who wish to update or improve their knowledge of data analytics and data visualization and apply best practices to strengthen their current roles" (emphasis added).

While our proposed MS in Artificial Intelligence for Business program shares some coursework with the MSU program, their focuses are radically different. Our program primarily emphasizes the application of AI in business, whereas the MSU program is transdisciplinary, with only one of its elective tracks focusing on business. However, this business track at MSU does not delve into the practical implementation and use of AI in business, as our program application proposes. To clarify, our program includes some data analytics courses because data analytics often serves as a foundational step before implementing AI. High-quality, clean, and well-structured data is essential for training and validating AI models. Therefore, our program equips students with the necessary tools for AI coursework, enabling them to prepare data, identify relevant features, and discern patterns that inform the design and training of AI models.

Our MS in Artificial Intelligence for Business program places particular emphasis on cutting-edge Artificial Intelligence algorithms and their practical applications. Instead of covering a broad spectrum of topics in data science "horizontally," our program delves deep into the AI domain "vertically." In contrast to existing data analytics programs, such as the data analytics and visualization program offered by Morgan State University, our program places less emphasis on traditional data analytics and visualization techniques. After providing students with fundamental programming and statistical knowledge, we shift our focus to advanced AI algorithms, including deep learning, reinforcement learning, and large language models. Notably, we have developed a series of courses focused on AI applications in various domains, such as finance, accounting, supply chain, and marketing. It's important to highlight that these courses are not generic business classes, as found in the MSU program's business track. In our AI application courses, students learn how to apply cutting-edge AI models in specific fields. For

instance, in the marketing application course, students will gain expertise in using ChatGPT to generate advertising texts. Graduates from our program acquire a deep understanding of AI's capabilities across various fields and possess the skills to apply appropriate AI models or software to address specific business challenges.

In summary, data analytics primarily revolves around historical data analysis to derive insights and make informed decisions, whereas AI involves using algorithms to simulate human intelligence and automate tasks. Data analytics serves as a critical preparatory step for utilizing data in AI applications within a business context. Consequently, graduates of the UBALT and MSU programs are likely to pursue entirely different career paths. MSU graduates will focus on working with data, involving tasks such as coding, database management, and modeling software utilization. In contrast, our UBALT program graduates will apply AI algorithms to specific functional areas and excel in identifying and implementing AI solutions for precise business problems.

Loyola University Maryland (LUM)—MS in Data Science with Specialization in Business Analytics

LUM's program website²⁵ states:

“The Business Analytics specialization is designed for students who have introductory statistics, and who are interested *in business applications of data science such as marketing or management*. The specialization requires two courses in computer science, two courses in data science, and two courses in statistics followed by electives in business, computer science, or statistics; and a capstone research project conducted with a partner in local industry/government/non-profit. The Technical specialization requires three courses in computer science, two courses in data science, and two courses in statistics followed by electives in computer science, statistics, and/or business; and a capstone research project conducted with a partner in local industry/government/non-profit.

For students beginning in Fall 2021 and thereafter, all courses will be offered *100% online*. Depending on the instructor, the course may be offered either synchronously or asynchronously” (emphasis added).

Required Courses

- CS701 - Introduction to Programming
- CS703 - Programming for Data Science
- CS737 - Machine Learning (only Technical Specialization)
- DS730 - Introduction to Data Science
- DS795 - Data Science Project Design
- DS796 - Data Science Project
- DS851 - Business Intelligence and Data Mining
- ST710 - Statistical Computing
- ST765 - Linear Statistical Models

Technical Electives

²⁵ <https://www.loyola.edu/academics/data-science/graduate/curriculum-course-planning>

- Computer Science Electives
- CS745 - Multimedia Data Analysis and Mining
- CS766 - Information Retrieval and Natural Language Processing
- ST767 - Multivariate Analysis
- ST775 - Generalized Linear Models and Multilevel Models
- ST778 - Time Series Analysis

The program's business electives are:

- GB712 - Law, Ethics, and Social Responsibility
- GB735 - Project Management
- DS736 - Data Visualization for Decision Making
- DS739 - Data Management and Database Systems
- GB740 - Digital Marketing and Analytics (only Business Analytics Specialization)
- GB759 - Special Topics in Management Information Systems: Location Analytics (only Business Analytics Specialization)

A review of the coursework above suggests that the program has only a minimal overlap with our program through a single technical Machine Learning course. Among business electives, there is an ethics course but the ethics course in our program emphasizes ethical issues in AI and is not a generalized ethics course. Moreover, the LUM program is entirely online but we are applying for a face-to-face program. Hence, our programs will not be competing against each other.

UMBC's MPS in Data Science

Based on the listing of program requirements on its website²⁶, this appears to be a technical data science program with one required machine learning course. The program also includes a Management Science track which allows 9 credits of electives from management and engineering management. However, none of these courses emphasize the application of AI in business. Thus, this program does not compete with our program.

In conclusion, we would like to point out that our program duplication analysis also reveals that our program is complementary to all data or business analytics programs in Maryland. As such, students completing these programs in the other institutions can still take advantage of our program; it is particularly advantageous for students completing business analytics or data analytics undergraduate programs.

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.

According to the current MHEC Program Inventory, none of the HBIs in the State currently offer graduate business programs in Artificial Intelligence. Thus, we do not expect any impact on high-demand HBI programs.

²⁶ <https://professionalprograms.umbc.edu/data-science/masters-of-professional-studies-data-science/>

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.**

We expect no effect on the uniqueness and institutional identities and missions of HBIs since none of the HBIs in the State currently provide graduate programs that emphasize applications of Artificial Intelligence for Business. We have discussed above how our program is truly distinct from the existing data analytics programs in 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.**

This is a new program that is cross-disciplinary in nature. It will be taught by the University of Baltimore’s Merrick School of Business faculty from Information and Decision Sciences, Management, Finance, and Marketing and Entrepreneurship.

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

Competency 1: AI and Machine Learning

LO 1.1: Students will articulate how to design, train, and evaluate AI and Machine Learning models that can be used in solving business challenges.

Competency 2: Application of AI and Machine Learning Tools in Business

LO 2.1 Students will be able to employ discipline-specific knowledge to identify proper models and critical features for solving business problems (including general and strategic human resource management, financial management, entrepreneurship, marketing, and operations and supply chain management).

LO 2.2 Students will be able to evaluate and address ethical, legal, and regulatory implications of applying Artificial Intelligence for Business.

Competency 3: Communication and Presentation Skills

LO 3.1 Students will be able to effectively communicate their recommendations and guidance on AI applications in various business disciplines to their constituents.

3. Explain how the institution will:

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

Program goals have been mapped across all courses in the curriculum and assessments for each competency and goal occur within courses. Rubrics are developed by the department and used to assess artifacts collected by faculty bi-annually. Departmental assessment meetings discuss ways to improve student outcomes across the curriculum and improvements are not limited to the courses where the assessment occurs. Finally, the Merrick School of Business conducts bi-annual Assessment Retreats where assessment results are presented to a broad constituency.

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

As described above, assessment is a faculty-driven cycle of continuous improvement. While assessment results document student achievement, they are also used to drive curriculum change.

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

While the total number of credits after prerequisites remains unchanged, both the required and elective courses have been realigned in the proposed program.

Program Requirements:

Prior to starting their studies, students are required to demonstrate basic knowledge of business functions and operations. This can be evidenced by prior coursework or completion of the Business Foundations module (which can be in the form of a MOOC or equivalent course).

Required Courses (18 credits):

Course Number	Title	Credits
INSS 611 and 612	Data Science Tool Kit I and II	3
OPRE 505 and 506	Fundamentals of Statistics and Managerial Statistics	3
OPRE 605 and 606	Business Analytics, Data Mining for Business	3
INSS 625	Introduction of AI in Business	3
INSS 630	Machine Learning for Business	3
ECON 740	Business, Ethical, and Regulatory Perspectives of AI	3

Application of AI in business electives: choose 4 courses from the following list (12 credits)

Course Number	Title	Credits
MGMT 740	Applications of Artificial Intelligence for Human Resources and General Management	3
MKTG 740	Applications of Artificial Intelligence in Marketing	3
ENTR 740	Business Applications of Artificial Intelligence in Entrepreneurship	3
OPM 740	Applications of Artificial Intelligence for Operations and Supply Chain Management	3
FIN 624	Finance and Accounting Analytics	3

CIP Code 52.1399 is defined as follows: *Any instructional program in business quantitative methods and management science not listed above.*²⁷

Because our program combines requirements in business statistics, machine learning and business applications of AI, it incorporates elements of management science and business quantitative methods; thus, we believe this CIP code is appropriate.

²⁷ <https://nces.ed.gov/ipeds/cipcode/cipdetail.aspx?y=55&cipid=88928>

Recommended Course Sequencing

The proposed program builds heavily upon skills in artificial intelligence that are introduced in the first semester(s) of study. Upon this foundation, students will gain insights into ethics and emerging regulation in the field and will then apply this knowledge in their final 12 credits. A prospective three semester sequence for a full-time student would be:

First Semester	Second Semester	Third Semester
INSS 611 and 612	OPRE 605 and 606	Application of AI Elective
OPRE 505 and 506	ECON 740	Application of AI Elective
INSS 625	INSS 630	Application of AI Elective
	Application of AI Elective	

For students studying part-time, additional semesters will be required to complete the program, although the general course sequencing will be similar.

Course Descriptions (credit hours are given in parentheses)

INSS 611 Data Science Toolkit I (1.50)

This course will introduce the basis of using the Python programming language in data science, specifically to collect and manipulate data in preparation for exploratory data analysis and prediction. No prior programming experience is required. Topics will include Python data structures, program logic and libraries, as well as data wrangling and data management. Types of data sources covered will include databases as well as unstructured data sources such as social media feeds.

INSS 612 Data Science Toolkit II (1.50)

The effectiveness of business analytics depends on the quality of the data fed into the analytics models used. Data scientists can spend as much as 60% of their time cleaning and organizing data. This course focuses on preparing data for analytics tasks, to improve the accuracy and reliability of the results. Using Python students will learn to "wrangle" (clean, transform, merge, and reshape) data. Techniques will include data parsing, data correction, and data standardization. Prerequisite: INSS 611 Data Science Toolkit I

OPRE 505 Fundamentals of Statistics (1.50)

Emphasizes applications of descriptive statistics in business. Topics include basic probability concepts, summary measures of location and dispersion, discrete and continuous probability distributions, sampling distribution of mean, and introductions to confidence interval estimation and hypothesis testing. Excel-based software is used for computer implementation.

Prerequisite: graduate standing

OPRE 506 Managerial Statistics (1.50)

Emphasizes applications of inferential statistics in business. Topics include confidence interval estimation, hypothesis testing, analysis of variance, simple linear regression and an introduction to multiple regression. Excel-based software is used for computer implementation.

Prerequisite: OPRE 505 Fundamentals of Statistics

OPRE 605 Business Analytics (1.50)

Explores business analytics and its applications to management decision-making for a range of business situations. Covers problem structuring; big data; data mining; optimization; computer simulation; decision analysis; and predictive modeling.

Prerequisite: OPRE 505 and OPRE 506 or equivalent

OPRE 606 Data Mining for Business (1.5)

This course provides an exploration of data mining techniques to discover meaningful insights within vast and complex datasets for business problems. Students will understand the role of data mining in today's data-driven world and gain practical skills for exploring data to extract patterns and associations, making predictions, segmenting data, and evaluating data mining models. Data mining algorithms covered in this course include single linkage cluster analysis, K-means, K-nearest neighbor, discriminant analysis, decision trees, market basket analysis, etc. Python is used as the main software in this course to implement data mining techniques. Students will apply data mining models to real-world case studies using Python to extract actionable knowledge from data. Prerequisite: OPRE 605 Business Analytics

INSS 625 Introduction to AI for Business (3)

In a business landscape increasingly driven by data and technology, artificial intelligence (AI) has emerged as a transformative force with the potential to drive efficiency, innovation, and competitive advantage across industries. This introductory course aims to equip students with the knowledge and tools needed to harness the power of AI to make informed decisions, enhance processes, and create value. Upon completing this course, participants will have a foundational understanding of AI and its practical applications in the business world. They will be equipped with the knowledge to engage in informed discussions about AI strategies, make data-driven decisions, and explore opportunities for AI integration within their organizations, as well as practical skills using generative AI tools such as ChatGPT.

Prerequisite: Completion of the Business Foundations Bootcamp (e.g., in the form of a MOOC or equivalent course), or permission of the Graduate Program Director.

INSS 630 Machine Learning for Business (3)

This course provides a systematic understanding of why and when machine learning models can help business decision-making processes in various areas. Students learn the use of unsupervised techniques, such as clustering, association, and dimensionality reduction, and supervised techniques, such as regression and classification. Algorithms covered include logistic regression, support vector machines, decision trees, K-Means, KNN, random forest, etc. Hands-on exercises using Python also teach students how to perform machine learning analyses, from data preprocessing to model evaluation. An introduction to deep learning concepts, including tools such as neural networks, caps off the course.

Prerequisites: INSS 612 Data Science Toolkit II and OPRE 506 Managerial Statistics.

ECON 740 Business, Ethical, and Regulatory Perspectives of AI (3)

This course delves into the ethical and regulatory dimensions of using Artificial Intelligence for Business incorporating perspectives of stakeholders. Introductions to various ethical perspectives and approaches are used to ferment analysis within various domains of ethical reasoning. Current and proposed regulations are discussed through an economic lens. Students will gain a comprehensive understanding of the ethical principles guiding AI applications, as well as the legal frameworks and compliance requirements for businesses operating in AI-driven environments. Students will be encouraged to critically consider how to apply AI in our daily and professional lives.

Prerequisite: INSS 625 Introduction to AI for Business.

FIN 624 Finance and Accounting Analytics (3)

This course focuses on applying cutting-edge analytics and artificial intelligence (e.g., machine learning and generative AI) techniques to examine “big data” in finance, accounting, and auditing. Students will acquire working knowledge of common financial data analytics software packages (e.g., Python, SAS, Tableau, ChatGPT and similar generative AI packages). The course will heavily emphasize using data analytics techniques in solving common finance, accounting and auditing problems through using data preparation, data visualization, and analysis techniques. Prerequisite: FIN 605

ENTR 740 Applications of Artificial Intelligence in Entrepreneurship (3)

Introduces students to the opportunities and challenges of artificial intelligence (AI) in entrepreneurship. Main topics include the practical applications of AI in opportunity identification, evaluation and exploitation, the role of AI in shaping startup activity, and societal implications of AI-driven entrepreneurship.

Prerequisite: INSS 625 Introduction to AI for Business.

MGMT 740 Applications of Artificial Intelligence for Human Resources and General Management (3)

Combining theory and practical application, this course first introduces students to foundational principles of General Management and Strategic Human Resource Management. Specific AI applications related to decision-making, and management of these functions are then presented and practiced. Finally, students will apply such relevant tools to business situations.

Prerequisite: INSS 625 Introduction to AI for Business.

MKTG 740 Applications of Artificial Intelligence in Marketing (3)

This course provides a basic understanding of the role artificial intelligence (AI) plays in marketing. The course will provide an overview of the machine learning techniques and applications for marketing.

Prerequisite: INSS 625 Introduction to AI for Business.

OPM 740 Applications of Artificial Intelligence for Operations and Supply Chain Management (3)

Combining theory and practical application, this course introduces students to important principles related to developing and implementing the integration of artificial intelligence tools into key areas related to operations and supply chain management such as forecasting, quality control, service quality, production efficiency, inventory management, and route optimization.

Prerequisite: INSS 625 Introduction to AI for Business.

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

Not applicable to graduate degrees.

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

The program is within scope of AACSB accreditation of the Merrick School of Business at the University of Baltimore.

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 system, availability of academic support services and financial resources, and costs and payment policies.

UBalt's website is a valuable resource that offers students a wealth of up-to-date information. This includes details about program curricula, course and degree requirements, expected technology competencies and skills for each degree, technical equipment prerequisites for courses, academic support services, available financial aid resources, comprehensive cost breakdowns, and payment policies. Additionally, students can access information about our state-of-the-art learning management system (LMS), Canvas, which serves as a vital platform for their educational journey.

Within Canvas, we provide a range of student tutorials to assist with LMS navigation, ensuring students can make the most of its features. Moreover, individual courses can offer resource materials through this platform, further enhancing the learning experience.

Our commitment to student success extends to ensuring accessibility. The University's Office of Disability and Access Services maintains a dedicated website and physical office with regular office hours. We also provide access to video and audio technologies to assist students who require accommodation.

The Division of Student Support and Access Services, along with the Bogomolny Library, offer a diverse array of academic and other support services. These encompass access to counseling resources, available 24/7, to address the various needs of our students and foster their overall well-being. The Office of the Dean will work with the website content manager to ensure that the MS in Artificial Intelligence for Business curriculum is developed. The catalog will be revised to reflect the new program requirements, and an updated Guide to Graduation for the MS in Artificial Intelligence for Business will be provided for the major. Information about course formats and technology assumptions, as well as any equipment requirements, will be available, as usual, to students in the course schedule. Each student will receive a syllabus that outlines

student learning outcomes, course format, technology needs, and campus resources. These resources include the Office of Disability and Access Services, the Academic Support Center (which has a Writing Center), and the Office of Technology Services.

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

The program director will communicate with the Merrick School of Business and university marketing departments to ensure that any marketing materials, such as program fact sheets, reflect the new curriculum. See above for information about the catalog and website. The catalog is updated annually and posted online, in addition to the routine program web page updates.

H. Adequacy of Articulation

Address how an undergraduate program supports transfer from other public institutions, especially community colleges. Identify as well any planned accelerated options or dual degrees. For graduate programs, identify any internal accelerated pathways or dual degrees or other planned partnerships that involve articulation.

The Program is within the scope of Accelerated BS-MS programs within the University of Baltimore, as articulated by the University System of Maryland's rules for Accelerated Programs. Under this Policy, an undergraduate student with a GPA of 3.5 or higher is allowed to take up to 9 graduate credits and double count them towards their graduate degree.

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

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

Faculty Member	Appointment Type	Field	Status	Terminal Degree	Academic Rank	Courses to be taught
Dan Gerlowski	Tenured	Economics	Full-time	PhD	Professor	ECON 740
Ting Zhang	Tenured	Economics	Full-time	PhD	Associate Professor	ECON 740, OPRE courses
David Lingelbach	Tenured	Entrepreneurship	Full-time	PhD	Professor	ENTR 740
Sunny Sunwar	Tenure Track	Entrepreneurship	Full-time	PhD	Assistant Professor	ENTR 740
Dong Chen	Tenured	Finance	Full-time	PhD	Associate Professor	FIN 624, OPRE courses
Hoang Nguyen	Tenured	Finance	Full-time	PhD	Associate Professor	FIN 624, OPRE courses
Jerry Yu	Tenured	Finance	Full-time	PhD	Associate Professor	FIN 624, OPRE courses
Nafeesa Yunus	Tenured	Finance	Full-time	PhD	Associate Professor	FIN 624, OPRE courses
Danielle Fowler	Tenured	Information Systems	Full-time	PhD	Associate Professor	INSS and OPRE courses
Rajesh Mirani	Tenured	Information Systems	Full-time	PhD	Associate Professor	INSS and OPRE courses
Cong Zhang	Tenure-track	Information Systems	Full-time	PhD	Assistant Professor	INSS and OPRE courses
Kevin Wynne	Tenure Track	Management	Full-time	PhD	Assistant Professor	MGMT 740
Amir Pezeshkan	Tenured	Management	Full-time	PhD	Associate Professor	OPM 740 or MGMT 740
William Carter	Tenured	Management	Full-time	PhD	Associate Professor	OPM 740 or MGMT 740
Jaya Singhal	Tenured	Management Science	Full-time	PhD	Professor	OPRE courses
Claire Guo	Tenure-track	Management Science	Full-time	PhD	Assistant Professor	INSS and OPRE courses
Dennis Pitta	Tenured	Marketing	Full-time	PhD	Professor	MKTG 740
Praneet Randhawa	Tenured	Marketing	Full-time	PhD	Associate Professor	MKTG 740
Kalyan Singhal	Tenured	Operations Management	Full-time	PhD	Professor	OPM 740

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

a) Pedagogy that meets the needs of the students

The University of Baltimore provides periodic training to its faculty on the use of the latest online and face-to-face teaching tools as well as professional development opportunities through attending national conferences and training, such as for example, Coursera, EdX, etc. In addition, the faculty is afforded opportunities to attend continuing professional education sessions through other providers of technical skills training, such as Coursera and Udemy.

b) The learning management system (LMS)

The University of Baltimore provides periodic necessary trainings in its Learning Management System—Canvas through its Center for Excellence in Learning, Teaching and Technology (CELTT) as well as periodic quality reviews of the faculty's utilization of LMS.

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

Similar to LMS training, The University of Baltimore's CELTT provides periodic training in online teaching to its faculty. Additionally, each department within the Merrick School of Business coordinates informal, collegial discussions about course design and delivery. Student evaluation data is used to improve course design and effectiveness.

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

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

The program does not require substantial additional library resources beyond those already provided by the University of Baltimore's Bogomolny Library which provides an adequate level of access to academic books and journals. Bogomolny Library also provides access to a number of datasets that can be used in AI applications.

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 University of Baltimore's current facilities provide excellent conditions for AI work through our Information Systems Lab and through our current computer labs. The University also provides students with loaner laptops whenever they need them. Our classrooms are adequately equipped for both online and face-to-face instructions, and they have up-to-date IT infrastructure.

- 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.**

The University of Baltimore provides every student with an email address, access to our learning management system (Canvas), and free access to Office 365 software (Word, Excel and PowerPoint). All faculty and credit-earning students are provided with an institutional e-mail account that integrates with the institution's learning management system, Canvas. Open-access, comprehensive student support for the learning management system is provided in module format and includes "how to" video and print tutorials, links to student services, and tips for success in an online learning environment. Faculty can access an LMS training site and work with Canvas faculty fellows from their colleges and instructional designers for course design and technical support. Both faculty and staff have access to 24/7 phone and chat support.

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

- 1. 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. Do not leave any cells blank (use "0" if no data is applicable).**

Narrative: The Merrick School of Business anticipates a modest student gain per year as a result of this curriculum revision. The full-time tuition rate is a weighted-average assuming 75% of the students are paying in-state tuition and 25% out-of-state, while part-time tuition is based on the in-state rate (as we assume part-time students to be largely from the state of Maryland).

TABLE 1: PROGRAM RESOURCES					
Resource Categories	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
1. Tuition and Fee Revenue (c + g below)	\$8,825	\$366,982	\$465,607	\$568,030	\$674,364
a. Number of F/T students	0	20	25	30	35
b. Annual Tuition/Fee Rate	\$17,548	\$17,899	\$18,257	\$18,622	\$18,995
c. Total F/T Revenue (a*b)	\$0	\$357,981	\$456,426	\$558,665	\$664,811
d. Number of P/T students	10	15	15	20	20
e. Credit Hour Rate [<i>PT tuition & mandatory fees – see note</i>]	\$981	\$1,000	\$1,020	\$1,041	\$1,061
f. Annual Credit Hours Rate (per student, average)	9	9	9	9	9
g. Total P/T Revenue (d*e*f)	\$8,825	\$9,002	\$9,182	\$9,365	\$9,553
2. Grants, Contracts & Other External Sources	0	0	0	0	0
3. Other Sources – N/A	0	0	0	0	0
TOTAL (Add 1-4)	\$8,825	\$366,982	\$465,607	\$568,030	\$674,364

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

TABLE 2: PROGRAM EXPENDITURES					
Resource Categories	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
1. Faculty (b + c below)	\$12,000	\$218,000	\$238,000	\$436,000	\$456,000
a. Number of FTE	0.5	1.5	2	2.5	2.5
b. Total Salary	\$12,000	\$200,000	\$220,000	\$400,000	\$420,000
c. Total Benefits	\$0	\$18,000	\$18,000	\$36,000	\$36,000
2. Admin Staff (b + c below)	\$0	\$0	\$0	\$0	\$0
a. Number of FTE	0	0	0	0	0
b. Total Salary	\$0	\$0	\$0	\$0	\$0
c. Total Benefits	\$0	\$0	\$0	\$0	\$0
3. Support Staff (b + c below)	\$18,000	\$18,900	\$19,845	\$20,837	\$21,879
a. Number of FTE	0.25	0.25	0.25	0.25	0.25
b. Total Salary	\$15,000	\$15,750	\$16,538	\$17,364	\$18,233
c. Total Benefits	\$3,000	\$3,150	\$3,308	\$3,473	\$3,647
4. Technical Support and Equipment	\$20,000	\$25,000	\$30,000	\$35,000	\$40,000
5. Library	\$0	\$0	\$0	\$0	\$0
6. New or Renovated Space	\$0	\$0	\$0	\$0	\$0
7. Other Expenses	\$0	\$0	\$0	\$0	\$0
Total (Add 1 through 7)	\$50,000	\$261,900	\$287,845	\$491,837	\$517,879

Note: Salary and benefit projections (lines 1, 1b, 1c, 3, 3b, and 3c) are based on current average salary and benefit expenditures adjusted for expected cost-of-living increases over time. It is important to note that faculty often teach in multiple graduate programs. With expected program growth, actual faculty expenses may be lower if part-time faculty are deployed.

We anticipate no new full-time faculty in FY 2025, although one full-time staff member will be added in FY 2026 and FY 2028. In addition, we expect to have additional expenses for adjunct faculty over the five-year period.

There are no expenses related to administrative staff, library, or new or renovated space attributable to the program. Additional support staff expenses relate to advising and student support.

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

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

The University has a shared governance process for curriculum approval. Both new courses and new programs are required to submit student learning outcomes (SLOs), which are then evaluated by faculty curriculum committees, plus staff in the deans' and provost's office.

The assessment of program student learning outcomes is faculty-driven. Assessment generally occurs within courses, but assessment results are shared and evaluated within the departments and School of Business.

Faculty are evaluated annually by their supervisor and dean. In addition, policies for tenure-track and tenured faculty call for in-depth peer review at regular intervals.

All courses undergo student evaluation using the college-wide software tool Explorance Evaluations. Students complete evaluations of their course and the instructor at the end of each semester, using an online form. Data from these evaluations are incorporated in the annual chair's evaluation of faculty and are used in faculty promotion and tenure decisions.

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

Student learning outcomes are assessed over a two-year cycle using direct and indirect measures. The primary assessment measures are direct assessments administered within courses, evaluated by faculty, reviewed by departments, and affirmed by the College of Business as a whole.

Retention is a key metric of the quality of our courses and faculty and retention data is reviewed on an ongoing basis, as are student evaluations of faculty. These evaluations have highlighted improvements that can be implemented across the curriculum in course delivery and feedback.

As we implement the new curriculum, we have created a new assessment plan. Embedded assessments will be deployed beginning in Fall 2025 for the new program goals and the faculty will use this data to drive curriculum 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.

The University of Baltimore is an unusually diverse institution, with an average undergraduate age over 27, and a majority-minority undergraduate population. Approximately 47 percent of UB students are African American and 32 percent white. The University serves nontraditional students, which includes many working adults. UB's current strategic plan underlines the importance of diversity, equity, and inclusion, and one of the strategic goals is specifically to strengthen UB's commitment to these core values.

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.**

The Merrick School of Business has a long history of online education, offering the first fully online AACSB-accredited MBA program. We also offer the MS in Accounting and Business Advisory Services degree online. At this time, however, this is not an online program, although there is support outside the classroom through Canvas.

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

The University of Baltimore provides support for distance education, both at the program level and in individual courses, through its Center for Excellence in Learning, Teaching, and Technology.