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LETTER OF NOTIFICATION

Master of Science in Applied Artificial Intelligence

(MS-AAI)

University of Memphis

Polytechnic@UofM | Herff College of Engineering

Submitted to:

Tennessee Higher Education Commission (THEC)

Policy A1.0 – New Academic Programs: Approval Process

May 14, 2026

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SECTION I: OVERVIEW

Program Information

Field	Information
Institution Name	University of Memphis
Proposed Academic Program Title	Applied Artificial Intelligence
Concentrations	Smart Cities; Electrical and Computer Engineering; Public Health; Business; Language and Literacy Technologies
Degree Name	Master of Science
Degree Designation (Abbreviated)	M.S.
Proposed CIP Code	11.0102
CIP Code Title	Artificial Intelligence and Robotics
Proposed Implementation Date	08/01/2027
Academic Program Liaison	Dr. Carol Danehower

CIP Code Definition

CIP 11.0102 – Artificial Intelligence: A program that focuses on the symbolic inference, representation, and simulation by computers and software of human learning and reasoning processes and capabilities, and the computer modeling of human motor control and motion. Includes instruction in computing theory, cybernetics, human factors, natural language processing, and applicable aspects of engineering, technology, and specific end-use applications.

Standard Occupational Classification (SOC) Codes and Definitions

The MS-AAI program prepares graduates for occupations spanning multiple SOC categories. The program's applied, interdisciplinary nature—emphasizing AI literacy, strategic implementation, and sector-specific applications—aligns with both technical AI roles and managerial/analytical positions across various industries. SOC codes and definitions are drawn from the U.S. Bureau of Labor Statistics Standard Occupational Classification system and O*NET OnLine (accessed January 2026).

Primary SOC Codes (Directly Crosswalked to CIP 11.0102)

SOC Code	Occupation Title	Official BLS/O*NET Definition	Curriculum Justification
15-2051	Data Scientists	Apply techniques and theories in mathematics, statistics, and computer science to uncover patterns, trends, and anomalies in complex data sets; build descriptive and predictive models using specialized software.	Core program alignment: graduates apply AI/ML tools for data analysis, predictive modeling, and business intelligence using no-code/low-code platforms. Directly served by core courses in Applied AI Tools and Computational Thinking.

SOC Code	Occupation Title	Official BLS/O*NET Definition	Curriculum Justification
15-1299	Computer Occupations, All Other	All computer and information research occupations not listed separately. Encompasses emerging and rapidly evolving roles in artificial intelligence implementation, AI integration engineering, and AI deployment.	Captures emerging AI implementation specialist roles aligned with the program's focus on AI deployment and strategic integration across industries.
15-2041	Statisticians	Develop or apply mathematical or statistical theory and methods to collect, organize, interpret, and summarize numerical data to provide usable information. May specialize in fields such as biostatistics, agricultural statistics, business statistics, or economic statistics.	Program emphasizes statistical literacy, predictive modeling, and AI-generated data interpretation without requiring deep mathematical programming expertise.
11-9199	Managers, All Other	All managers not listed separately. Includes AI strategy directors, AI program managers, and organizational leaders responsible for overseeing AI adoption initiatives and AI-enabled workforce transformation.	Curriculum explicitly includes AI strategy (MGMT 7162), AI-infused leadership (MGMT 6462), and capstone projects, preparing graduates to lead AI transformation initiatives.

Additional SOC Codes by Concentration

Each concentration prepares graduates for specific sectoral applications. The following SOC codes, while not all directly crosswalked to CIP 11.0102, are justified by the domain-specific curriculum and competencies developed in each concentration. These occupations represent the primary career pathways for graduates of each concentration area.

Smart Cities Concentration — SOC Codes and Definitions

SOC Code	Occupation Title	Official BLS/O*NET Definition	Curriculum Justification
19-3051	Urban and Regional Planners	Develop comprehensive plans and programs for use of land and physical facilities of local governments. Use AI and data-driven methods for infrastructure planning and city systems optimization.	CIVL courses on Smart Cities, Big Data, and Quantitative Methods prepare graduates to apply AI tools in urban planning and infrastructure decision-making.
11-3071	Transportation, Storage, and Distribution Managers	Plan, direct, or coordinate transportation, storage, or distribution activities in accordance with organizational policies and applicable government laws or regulations. Increasingly employ AI for routing optimization and supply chain analytics.	Memphis-specific logistics sector demand; Smart Cities curriculum incorporates AI-driven logistics and supply chain analytics.
17-2051	Civil Engineers	Perform engineering duties in planning, designing, and overseeing construction and maintenance of	CIVL concentration courses address AI applications in infrastructure design,

SOC Code	Occupation Title	Official BLS/O*NET Definition	Curriculum Justification
		building structures and facilities, including those for transportation and smart infrastructure systems.	numerical optimization, and smart systems integration.
13-1081	Logisticians	Analyze and coordinate the logistical functions of a firm or organization. Responsible for the entire life cycle of a product, including acquisition, distribution, internal allocation, delivery, and final disposal of resources.	Memphis logistics sector context; curriculum develops AI-augmented supply chain analysis and distribution optimization competencies.

Public Health Concentration — SOC Codes and Definitions

SOC Code	Occupation Title	Official BLS/O*NET Definition	Curriculum Justification
11-9111	Medical and Health Services Managers	Plan, direct, or coordinate medical and health services in hospitals, clinics, managed care organizations, public health agencies, or similar organizations. Increasingly use AI tools for health informatics, population health management, and operational efficiency.	Curriculum includes AI-driven machine learning in public health (PUBH 7626), responsible AI for public health (PUBH 6110), and predictive modeling for health outcomes (PUBH 7627).
19-1041	Epidemiologists	Investigate and describe the determinants and distribution of disease, disability, and other health outcomes and develop the means for prevention and control. Use AI and large language models to analyze population health patterns.	PUBH 7652 (Large Language Models in Public Health) and PUBH 7627 (Predictive Modeling in Social, Behavioral, and Health Outcomes) directly address AI applications in epidemiology.
21-1091	Health Education Specialists	Provide and manage health education programs that help individuals, families, and their communities maximize and maintain healthy lifestyles. Use AI tools for community needs assessment and tailored health messaging.	AI tools for community health assessment and AI-augmented health communication are core competencies developed in the Public Health concentration.
21-1094	Community Health Workers	Promote health within a community by assisting individuals to adopt healthy behaviors. Serve as a liaison between health and social services and the community.	Responsible AI for Public Health course specifically addresses ethical AI deployment in community settings.
21-1022	Healthcare Social Workers	Provide individuals, families, and groups with the psychosocial support needed to cope with chronic, acute, or terminal illnesses. Use data analytics to identify intervention needs and support care coordination.	Public Health concentration incorporates social determinants of health analytics and AI-assisted case management frameworks.
19-5011	Occupational Health and	Review, evaluate, and analyze work environments and design programs	Predictive modeling coursework (PUBH 7627) provides competency in AI-based risk

SOC Code	Occupation Title	Official BLS/O*NET Definition	Curriculum Justification
	Safety Specialists	and procedures to control, eliminate, and prevent disease or injury of workers. Employ AI-driven predictive analytics for workplace safety risk assessment.	analysis applicable to occupational health contexts.
19-2041	Environmental Scientists and Specialists, Including Health	Research, study, or develop methods and equipment for controlling, eliminating, or preventing sources of pollutants or hazards affecting the environment or public health. Use AI tools for environmental monitoring and modeling.	AI and machine learning for environmental health outcomes are addressed through the Public Health concentration's data analytics coursework.

Business Concentration — SOC Codes and Definitions

SOC Code	Occupation Title	Official BLS/O*NET Definition	Curriculum Justification
11-1021	General and Operations Managers	Plan, direct, or coordinate the operations of public or private sector organizations. Increasingly employ AI-driven analytics for operational decision-making and strategic planning.	MGMT 7162 (Strategy and the AI Industry) and MGMT 6462 (AI Infused Leadership) prepare graduates for AI-augmented operational leadership.
13-1111	Management Analysts	Conduct organizational studies and evaluations, design systems and procedures, conduct work simplification and measurement studies, and prepare operations and procedures manuals.	Business concentration's focus on MIS-enabled AI analytics (MIS 7624, MIS 7623) prepares graduates to conduct AI-driven organizational analysis.
13-1082	Project Management Specialists	Analyze and coordinate the schedule, timeline, procurement, staffing, and budget of a product or service on a per project basis. Use AI tools for project forecasting and resource optimization.	AI-infused leadership and strategy courses develop AI-augmented project management competencies.
11-3071	Transportation, Storage, and Distribution Managers	Plan, direct, or coordinate transportation, storage, or distribution activities. AI tools are increasingly central to supply chain visibility and optimization.	Business concentration addresses AI applications in logistics and supply chain management, particularly relevant to the Memphis logistics economy.
13-1071	Human Resources Specialists	Recruit, screen, interview, or place individuals within an organization. May also perform other activities in multiple human resources areas. AI tools are rapidly transforming talent acquisition, workforce analytics, and employee engagement.	The curriculum's AI strategy component addresses AI applications in HR functions including talent analytics and AI-enhanced recruitment.
13-1081	Logisticians	Analyze and coordinate the logistical functions of a firm or organization.	AI-augmented supply chain analysis is developed through the Business

SOC Code	Occupation Title	Official BLS/O*NET Definition	Curriculum Justification
		Responsible for the entire life cycle of a product.	concentration's analytics and strategy coursework.

Electrical and Computer Engineering Concentration — SOC Codes and Definitions

SOC Code	Occupation Title	Official BLS/O*NET Definition	Curriculum Justification
11-9041	Architectural and Engineering Managers	Plan, direct, or coordinate activities in such fields as architecture and engineering or research and development. Oversee teams integrating AI into engineering systems and products.	EECE graduate courses in AI, machine learning, and neural networks develop the technical depth needed for engineering leadership in AI-integrated systems.
17-2071	Electrical Engineers	Research, design, develop, test, or supervise the manufacturing and installation of electrical equipment, components, or systems.	EECE concentration courses in AI, neural networks, and machine learning develop AI augmentation competencies for electrical engineering applications.
17-2072	Electronics Engineers, Except Computer	Research, design, develop, or test electronic components and systems for commercial, industrial, military, or scientific use.	AI and pattern recognition coursework (EECE 7219) develops competencies applicable to AI-driven electronics design and quality systems.
15-1252	Software Developers	Research, design, and develop computer and network software or specialized utility programs. Apply AI and machine learning techniques to software product development.	EECE 6741 (Neural Networks), EECE 7269 (Machine Learning), and EECE 7720 (AI) provide foundational competencies for AI-augmented software development.
17-2061	Computer Hardware Engineers	Research, design, develop, or test computer or computer-related equipment for commercial, industrial, military, or scientific use.	The concentration's AI and machine learning coursework supports AI-hardware integration competencies, directly relevant to xAI's Memphis operations.
15-1253	Software Quality Assurance Analysts and Testers	Develop and execute software tests to identify software problems and their causes. Increasingly use AI tools to automate testing processes and improve test coverage.	EECE courses in machine learning and pattern recognition develop AI-driven quality assurance and automated testing competencies.
15-1241	Computer Network Architects	Design and implement computer and information networks, such as local area networks (LANs), wide area networks (WANs), intranets, extranets, and other data communications networks.	AI applications in network management and optimization are addressed through the concentration's data analytics and AI coursework.

Language and Literacy Technologies Concentration — SOC Codes and Definitions

SOC Code	Occupation Title	Official BLS/O*NET Definition	Curriculum Justification
27-3042	Technical Writers	Write technical materials, such as equipment manuals, appendices, or	ENGL courses in technical editing (ENGL 7809), AI and Publishing (ENGL 7486), and

SOC Code	Occupation Title	Official BLS/O*NET Definition	Curriculum Justification
		operating and maintenance instructions. AI tools are transforming technical documentation workflows.	digital rhetoric (ENGL 6620) develop AI-augmented technical writing competencies.
27-3091	Interpreters and Translators	Interpret oral or sign language, or translate written text from one language to another. AI-powered translation tools are rapidly transforming this occupation.	Corpus linguistics (ENGL 7508), survey of linguistics (ENGL 7511), and AI-enhanced language technologies coursework prepare graduates to leverage AI tools in translation and interpretation.
25-9031	Instructional Coordinators	Develop instructional material, coordinate educational content, and incorporate current technology into instruction. Use AI tools for adaptive learning system development.	Language Learning and Technology (ENGL 7528) and digital rhetoric courses develop AI literacy for educational technology applications.
27-3041	Editors	Plan, coordinate, or edit content of material for publication. AI writing and editing tools are increasingly central to modern editorial workflows.	ENGL 7809 (Technical Editing) and ENGL 7486 (AI and Publishing) directly address AI-augmented editorial processes.
27-3031	Public Relations Specialists	Promote or create an intended public image for individuals, groups, or organizations. Generate and distribute news and promotional material.	Digital Rhetoric and Writing (ENGL 6620) and AI and Publishing (ENGL 7486) develop AI-augmented communications competencies for public relations contexts.
25-4022	Librarians and Media Collections Specialists	Administer libraries or media services, including audio-visual equipment and programs. Use AI tools for cataloging, reference services, and collection management.	Corpus linguistics and information organization coursework develops AI-augmented library and knowledge management competencies.
27-3043	Writers and Authors	Originate and prepare written material, such as scripts, editorials, and stories. AI tools are transforming content creation across all writing domains.	AI and Publishing (ENGL 7486), Collaborative Writing (ENGL 7818), and Digital Rhetoric courses prepare graduates to work with AI-augmented writing tools responsibly.

Emerging Occupational Categories Created by Generative AI

The rapid integration of generative artificial intelligence (AI) into enterprise, government, and civic operations is producing a new stratum of professional roles that did not exist—or existed only in nascent form—five years ago. These positions are not adequately captured by current Standard Occupational Classification (SOC) codes or Classification of Instructional Programs (CIP) taxonomy, which underwent their most recent substantive revisions prior to the widespread deployment of large language models (LLMs). Industry analysis documents growth rates of 135.8% year-over-year for Prompt Engineer roles and 143.2% for AI Engineer roles, while AI Content Creator positions grew 134.5% over the same period (Autodesk AI Jobs Report, 2025). The World Economic Forum's Future of Jobs Report 2025 projects a net global creation of 78 million positions by 2030, with governance, risk, and AI oversight roles among the fastest-growing categories. Regulatory imperatives—including the EU AI Act (full enforcement effective August 2, 2026), emerging U.S. state legislation, and enterprise liability frameworks—

are driving immediate, measurable demand for professionals capable of auditing models for bias, constructing ethical deployment frameworks, managing AI security operations, and directing generative systems at scale. Critically, many of these roles are **judgment-first** rather than code-first: they require domain expertise, systems thinking, ethical reasoning, and cross-functional leadership—precisely the competencies cultivated by the MS-AAI program's interdisciplinary, leadership-oriented curriculum.

The table below maps each emerging occupational category to the specific courses that develop the requisite competencies, demonstrating that the MS-AAI is not merely responsive to the generative AI labor market but is intentionally architected to produce the interdisciplinary practitioners it requires.

Alignment of MS-AAI Curriculum to Emerging Generative AI Occupational Categories

Emerging Role Category	Supporting Core Courses (All Students)	Supporting Concentration Course(s)	Key Competencies Developed
AI Governance & Compliance	• PHIL 6001: AI Ethics and Risk Mitigation • TECH 7701: Computational Thinking and Language Model Fundamentals • TECH 7702: Capstone Project in Applied AI	• MGMT 7500: AI Strategy and Executive Decision-Making (Business) • PUBH 6110: Responsible AI for Public Health (Public Health)	• Ethical AI framework design and deployment • Algorithmic bias detection and mitigation • Regulatory compliance (EU AI Act, GDPR/CCPA) • Model governance and auditability
AI Policy & Regulatory Affairs	• PHIL 6001: AI Ethics and Risk Mitigation • TECH 7701: Computational Thinking and Language Model Fundamentals	• MGMT 7500: AI Strategy and Executive Decision-Making (Business) • MGMT 6462: AI Infused Leadership (Business)	• AI policy development and interpretation • Organizational AI governance frameworks • Cross-functional stakeholder communication • AI risk assessment and disclosure
Synthetic Data Engineering	• TECH 7701: Computational Thinking and Language Model Fundamentals • TECH 6701: Applied AI Tools and Prompt Engineering	• EECE 6741: Introduction to Neural Networks and Deep Learning (ECE) • EECE 6745: Introduction to Machine Learning (ECE) • PUBH 7626: Generative AI-Assisted ML Programming (Public Health)	• Generative model design for synthetic data • Privacy-preserving data pipeline construction • Neural network training and validation • Statistical fidelity assessment

Emerging Role Category	Supporting Core Courses (All Students)	Supporting Concentration Course(s)	Key Competencies Developed
AI Security Operations (AI SecOps)	• PHIL 6001: AI Ethics and Risk Mitigation • TECH 7701: Computational Thinking and Language Model Fundamentals • TECH 7702: Capstone Project in Applied AI	• EECE 7720: Artificial Intelligence (ECE) • MIS 7623: AI-Assisted Application Development for Business (Business)	• Adversarial AI testing and red-teaming • Prompt injection defense and API security • ML pipeline vulnerability assessment • Privacy engineering principles
Prompt Architecture & GenAI Engineering	• TECH 6701: Applied AI Tools and Prompt Engineering • TECH 7701: Computational Thinking and Language Model Fundamentals • TECH 7702: Capstone Project in Applied AI	• MIS 7624: AI-Assisted Analytics for Business (Business) • ENGL 7486: AI and Publishing (Language & Literacy Technologies)	• Complex prompt chain design and optimization • Retrieval-Augmented Generation (RAG) system development • LLM behavioral alignment and evaluation • Automated business workflow engineering
AI Content Curation & Brand Voice Management	• TECH 6701: Applied AI Tools and Prompt Engineering • TECH 7701: Computational Thinking and Language Model Fundamentals	• ENGL 6620: Digital Rhetoric and Writing (Language & Literacy Technologies) • ENGL 7809: Technical Editing (Language & Literacy Technologies) • ENGL 7486: AI and Publishing (Language & Literacy Technologies) • ENGL 7818: Collaborative Writing (Language & Literacy Technologies)	• AI-mediated content production and curation • Brand voice alignment and quality assurance • Generative media direction across modalities • Editorial judgment for AI-generated outputs
AI Cloud & Infrastructure Architecture	• TECH 7701: Computational Thinking and Language Model Fundamentals • TECH 7702: Capstone Project in Applied AI	• EECE 6731: Data Analytics and Visualization (ECE) • EECE 7269: Machine Learning & Applications (ECE) • CIVL 7xxx: Big Data for Smart Cities (Smart Cities) • PUBH 7626: Generative AI-Assisted ML Programming (Public Health)	• Scalable AI system and MLOps pipeline design • Big data architecture and cloud deployment • Model performance monitoring and governance

Emerging Role Category	Supporting Core Courses (All Students)	Supporting Concentration Course(s)	Key Competencies Developed
			• Infrastructure cost-efficiency analysis
AI Implementation & Workforce Strategy	• TECH 6701: Applied AI Tools and Prompt Engineering • TECH 7702: Capstone Project in Applied AI • PHIL 6001: AI Ethics and Risk Mitigation	• MGMT 7500: AI Strategy and Executive Decision-Making (Business) • MGMT 6462: AI Infused Leadership (Business) • MIS 7624: AI-Assisted Analytics for Business (Business)	• Workflow automation analysis and design • AI inference cost vs. value assessment • Change management and organizational transition • Executive AI strategy and investment rationale
AI-Human Collaboration & Workforce Transition	• TECH 6701: Applied AI Tools and Prompt Engineering • PHIL 6001: AI Ethics and Risk Mitigation • TECH 7702: Capstone Project in Applied AI	• MGMT 6462: AI Infused Leadership (Business) • ENGL 7528: Language Learning and Technology (Language & Literacy Technologies) • PUBH 6110: Responsible AI for Public Health (Public Health)	• Human-AI co-pilot workflow design • RLHF principles and AI training feedback • Employee reskilling program development • Equity-centered AI deployment practices
AI Product Management	• TECH 7701: Computational Thinking and Language Model Fundamentals • TECH 7702: Capstone Project in Applied AI • PHIL 6001: AI Ethics and Risk Mitigation	• MGMT 7500: AI Strategy and Executive Decision-Making (Business) • MIS 7624: AI-Assisted Analytics for Business (Business) • MIS 7623: AI-Assisted Application Development for Business (Business)	• AI product lifecycle and roadmap development • Cross-functional technical leadership • ROI measurement and stakeholder reporting • Responsible AI product governance

Note: Core courses (TECH 6701, TECH 7701, TECH 7702, PHIL 6001) are required of all MS-AAI students regardless of concentration. Concentration courses listed are representative; students select from available electives within their declared concentration area. Course numbers designated 7xxx indicate courses under development at time of LON submission.

Academic Program Liaison

Field	Information
Name	Dr. Carol Danehower

Field	Information
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Proposed Implementation Date

Field	Information
Proposed Implementation Date	08/01/2027
Rationale	The proposed date reflects the expected completion of all THEC approval steps, including Commission approval, and provides sufficient time for recruiting the inaugural cohort for the Fall 2027 semester.

SECTION II: BACKGROUND

Purpose and Nature of the Academic Program

Overview

Artificial intelligence is no longer a niche technical domain; rather, it is a strategic asset reshaping healthcare systems, business models, logistics networks, public policy, and education. The accelerating adoption of AI across all sectors of the economy has created a critical workforce gap: there are too few professionals trained to thoughtfully apply AI tools within their fields, to ask the right questions of AI-generated data, to ensure ethical and effective AI deployment, and to bridge the gap between technical developers and organizational decision-makers.

To address this documented need, the University of Memphis proposes a Master of Science in Applied Artificial Intelligence (MS-AAI). The MS-AAI is envisioned as a code-light, interdisciplinary program that equips students with the knowledge to use AI tools responsibly and strategically within their professional sectors. The program is designed for learners from public health, business, policy, engineering, and other professional backgrounds who wish to lead and manage AI adoption rather than develop AI systems. One of the distinguishing characteristics of the program is the interdisciplinary nature. Students are required to take courses outside their own area of concentration, and they will also be required to interact with other students from different disciplines in the capstone course. This makes the program very unique compared to others. It's not just multi-disciplinary, it is INTER disciplinary.

This program aligns with national labor trends. According to McKinsey & Company (2024), 78% of organizations were already using AI as of 2024, and 92% expect to increase investments in AI integration. Demand is no longer limited to AI developers; there is a growing need for professionals who can bridge the technical-organizational divide—domain experts capable of evaluating AI solutions, managing deployments, ensuring ethical use, and translating organizational needs into implementable AI strategies.

Program Structure and Curricular Requirements

The Master of Science in Applied Artificial Intelligence is a 30-credit hour program consisting of:

- **Core (12 credit hours):** Foundational courses in AI tools, prompt engineering, computational thinking, AI ethics and risk mitigation, and a culminating capstone project.
- **Concentration (12 credit hours):** Students select from five concentrations aligned with major industry sectors: Smart Cities, Electrical and Computer Engineering, Public Health, Business, or Language and Literacy Technologies.
- **Electives (6 credit hours):** Students may select from AI-relevant graduate courses across the university, excluding courses from their concentration discipline.

Target Audience

The primary target audience for the MS-AAI includes working professionals, career changers, and recent graduates from non-computer science backgrounds who seek to apply AI tools strategically within their professional domains. The program does not require prior programming expertise or advanced mathematics (such as calculus or discrete mathematics). Transfer considerations:

Students entering with relevant graduate coursework may petition for transfer credit in accordance with University of Memphis graduate policies, subject to standard review by the program director.

Delivery Method and Location

Delivery Method: Hybrid — the program is delivered through a combination of in-person instruction at the University of Memphis main campus and synchronous/asynchronous online components delivered through UofM Global. This modality aligns with the THEC definition of a Hybrid program (programs in which 25–74 percent of instruction is delivered online). Students may complete the program primarily online, or may participate more extensively in face-to-face instruction based on their professional circumstances.

Delivery Location: University of Memphis Main Campus, Memphis, Tennessee, and online via UofM Global (umglobal.memphis.edu).

Distinctive Program Design

The MS-AAI is intentionally designed as a code-light program. While students engage with AI tools and data platforms, the emphasis is on conceptual understanding, interpretation of results, strategic implementation, and effective communication—rather than writing complex code or developing algorithms from scratch. This design reflects the documented workforce need for AI-literate professionals capable of leading AI adoption across sectors, rather than solely for technical AI developers.

Alignment with THEC State Master Plan and Institutional Mission

Alignment with the THEC State Master Plan

Tennessee's 2025–2035 Strategic Higher Education Master Plan: Enhancing the Value for Tennessee (hereinafter, the Plan) provides the overarching framework guiding THEC policy and program approval decisions. The Plan's unifying vision is that every Tennessean can earn a credential that leads to lifelong success and a stronger Tennessee. It is organized around three cornerstones—Aligned, Achievable, and Agile—and charges higher education with producing graduates who can nimbly navigate what future industries need. The proposed MS-AAI program demonstrates direct and substantive alignment with each cornerstone and with the Plan's explicit priorities regarding artificial intelligence, workforce alignment, and credential quality.

The Plan's Mandate on Artificial Intelligence

The 2025–2035 Plan explicitly identifies artificial intelligence as a transformative force requiring an immediate higher education response. Citing recent Brookings Institution research, the Plan states that generative artificial intelligence will impact 85% of workers—meaning approximately 2.7 million Tennessee workers face AI-driven disruption (Kinder et al., 2024). The Plan further projects that by 2031, 63% of jobs in Tennessee will require some form of postsecondary training (Carnevale et al., 2023), underscoring the urgency of high-quality, workforce-aligned credentials.

This mandate builds directly on findings first articulated in the 2020 Master Plan Update, which convened a Future of Work task force and concluded:

> *"Tennessee's economy is at great risk for disruption resulting from automation and artificial intelligence... [All] individuals employed in Tennessee must learn to interact with artificial intelligence using critical thinking, data analysis, and diverse communication skills rather than simply rely on artificial intelligence to complete a variety of tasks."*
>
> *— THEC Master Plan Update, 2020; affirmed in the 2025–2035 Strategic Plan*

The MS-AAI program is expressly designed to fulfill this mandate. Its code-light, interdisciplinary approach produces graduates capable of applying AI tools with critical thinking, data analysis, and domain-specific communication skills—precisely the competencies identified across both Plan documents as essential to protecting Tennessee workers and employers from AI-driven disruption.

Alignment with the Three Cornerstones of the 2025–2035 Plan

The following table presents the MS-AAI program's alignment with each of the Plan's three cornerstones and their key objectives:

Plan Cornerstone and Objective	MS-AAI Program Alignment
ALIGNED — Meaningful: Ensure programs clearly articulate durable and workforce-relevant skills; expand high-quality experiential learning; connect academic content to real-world career readiness (2025–2035 Plan, pp. 11–12)	The MS-AAI curriculum is structured around eight explicitly defined program learning outcomes mapped directly to workforce competencies: AI tool application, prompt engineering, ethical governance, critical evaluation, and AI leadership. The required capstone project embeds the experiential learning the Plan identifies as a specific priority for all credential programs. Durable skills including critical thinking, data analysis, professional communication, and adaptability are developed across all core and concentration courses.
ALIGNED — Continuous: Support lifelong learners; align credentials to labor market needs; provide clear on-ramps for Tennesseans at any stage of their career journey (2025–2035 Plan, pp. 10–11)	The MS-AAI targets working professionals and career changers—the segment the Plan identifies as most at risk from AI disruption and most underserved by existing programs. Five concentration tracks allow students to build AI competencies directly on top of an existing career foundation. Hybrid delivery and the 30-credit structure reduce time-to-credential, supporting the Plan's goal of flexible, continuous postsecondary pathways for adult learners.
ACHIEVABLE — Accessible and Supported: Provide flexible pathways for part-time and working students; remove barriers for non-traditional learners; reduce time to completion (2025–2035 Plan, pp. 13–20)	The Plan notes that more than 53% of Tennessee community college students and 18% of university students attend part-time, largely due to work and caregiving obligations. The MS-AAI's hybrid delivery and code-light curriculum directly address this. No programming prerequisites remove traditional STEM access barriers for professionals from healthcare, business, education, and public policy backgrounds. The 30-credit, 18–24 month structure minimizes financial burden and time-to-degree.
ACHIEVABLE — Affordable: Connect credentials to living-wage outcomes; maximize institutional efficiency (2025–2035 Plan, pp. 15–16)	Courses are supported by existing programs in partner colleges, requiring minimal new state investment. No new tenure-track positions are required at launch. Estimated median wages for program graduates in the Memphis region range from 123%–322% of the local living wage ($44,803/year, MIT Calculator 2025), demonstrating the return on investment the Plan identifies as essential to rebuilding public confidence in higher education.
AGILE — Proactive: Leverage cross-sector data and labor market intelligence to anticipate future academic program demand; ensure programs offer the skills needed for the forthcoming	Program development was informed by commissioned EAB labor market analysis (October 2025), THEC Supply and Demand Dashboard data, O*NET Bright Outlook occupational projections, regional employer surveys, and an industry advisory workshop. An ongoing industry advisory board will provide continuous labor market intelligence to guide curriculum iteration—

Plan Cornerstone and Objective	MS-AAI Program Alignment
workforce (2025–2035 Plan, p. 20)	precisely the mechanism the Plan identifies for proactive, workforce-responsive program management.
AGILE — Data Informed: Advance accountability measures; leverage Quality Assurance Funding to ensure program quality (2025–2035 Plan, pp. 25–26)	The Plan states that THEC will continue to align new academic program approval with Plan priorities and will use QAF as an ongoing quality lever. The MS-AAI includes program-specific and student learning outcomes aligned with workforce competencies; post-graduation employment tracking; industry advisory board feedback cycles; and a comprehensive Year 3 QAF program review. These structures directly fulfill the Plan's data-informed accountability mandate.

Alignment with Institutional Mission

The mission of the University of Memphis is to produce well-rounded, successful graduates and cutting-edge research for the enrichment of our ever-changing society. The institution has adopted Ascend, its strategic plan for 2023–2028, which outlines seven goals and associated metrics.

The MS-AAI program supports Ascend across three key strategic priorities:

Ascend Strategic Priority	MS-AAI Program Alignment
Student Success	The program provides practical, in-demand training tailored to applied fields, preparing graduates for meaningful leadership roles in the AI-enabled workforce. The program leverages high-impact educational practices identified in Ascend, including integration of research opportunities, collaborative learning, and capstone project requirements.
Access and Flexibility	The hybrid delivery model expands educational opportunities for adult learners, working professionals, and underrepresented communities. This flexibility addresses Ascend priorities including diversified student sourcing beyond the immediate Memphis region and increased enrollment through UofM Global's online programs.
Research and Innovation	The curriculum incorporates applied project work and partnerships with health, nonprofit, and corporate sectors, positioning the University of Memphis as a leader in ethical and impactful AI education. The UofM is a recognized national leader in AI research across transportation and logistics, health data analytics, and autonomous systems—expertise the MS-AAI channels into professional education.

This graduate program will deepen the University's interdisciplinary identity and strengthen its standing as a Carnegie R1 institution known for accessible, practical innovation.

Institutional Capacity to Deliver the Proposed Academic Program

Administrative Structure

The MS-AAI program will be housed in the Polytechnic@UofM within the Herff College of Engineering. The Polytechnic maintains a dedicated administrative team—including a program coordinator, budget officer, director, and executive director—to support program operations. The program additionally leverages Herff College of Engineering resources including admissions support, academic advising, student recruiting, and career services.

A Director of Applied AI faculty position will coordinate curriculum development and delivery across the five participating colleges. This position will be funded initially through strategic

reallocation and institutional investment funds; upon achieving projected enrollment, tuition revenues will fully sustain the position.

Faculty Capacity

- **Core Curriculum Faculty:** Core courses will be developed and coordinated by a Director of Applied AI, supported by faculty from the Polytechnic@UofM, College of Arts and Sciences, Herff College of Engineering, Fogelman College of Business and Economics, and the School of Public Health. All participating faculty meet SACSCOC credentialing standards for graduate instruction.
- **Concentration Faculty:** Concentration courses leverage existing graduate-level faculty in the participating departments. No new faculty hires are required for initial implementation.
- **SACSCOC Compliance:** A substantive change prospectus will be submitted to SACSCOC pending THEC approval.

Infrastructure and Support

- **Online Delivery Infrastructure:** UofM Global provides robust online course delivery infrastructure, student support services, and enrollment management for online and hybrid programs.
- **Instructional Design:** The UM3D Instructional Design team supports faculty in developing online and hybrid course components.
- **Library and Computational Resources:** University Libraries maintain subscriptions to relevant databases (EBSCO, JSTOR, BLS datasets) and computational resources adequate for the program's needs.
- **Facilities:** No new facilities are required. Existing computer labs, classrooms, and online delivery infrastructure are adequate for program delivery.

Impact on Existing Programs

The MS-AAI program targets a distinct student population—working professionals and career changers from non-CS backgrounds—and is not expected to substantially reduce enrollment in existing programs. The program complements rather than competes with existing offerings:

Existing Program	Relationship to MS-AAI
MS in Computer Science (UofM)	Remains the pathway for students seeking deep technical expertise in algorithms, systems, and software engineering. MS-AAI serves a non-technical professional audience.
MBA and Business Programs (Fogelman)	MS-AAI serves students specifically interested in AI strategy and implementation; MBA provides broader general management training. Programs are complementary.
MPH (School of Public Health)	MS-AAI Public Health concentration adds AI/ML competencies to traditional public health training. Does not duplicate existing MPH curriculum.

Existing Program	Relationship to MS-AAI
MS in EECE / MS in Civil Engineering (Herff)	MS-AAI ECE and Smart Cities concentrations serve professionals seeking AI integration skills, not advanced technical research in engineering. Different target populations.

Existing Programs Offered at Public and Private Tennessee Institutions

Programs Under CIP 11.0102 (Artificial Intelligence) in Tennessee

In accordance with THEC's statutory responsibility to avoid unnecessary duplication, the following tables present all programs offered at public and private Tennessee institutions under CIP 11.0102 and related CIP codes, along with degrees awarded for the most recent three years of available data.

Institution	Program	CIP Code	Award Level	Credit Hours	2021-22 Graduates	2022-23 Graduates	2023-24 Graduates
University of Tennessee, Chattanooga	Artificial Intelligence for STEM	11.0102	C3 Undergraduate Certificate	12	0	0	0
University of Tennessee, Chattanooga	AI Knowledge Engineering	11.0102	C4 Graduate Certificate	12	0	0	0
University of Tennessee, Knoxville	Applied Artificial Intelligence	11.0102	C3 Undergraduate Certificate	12	0	0	0
University of Tennessee, Knoxville	Applied Artificial Intelligence	11.0102	BS	120	0	0	0
University of Tennessee, Knoxville	Applied Artificial Intelligence	11.0102	C4 Graduate Certificate	15	0	0	0
University of Tennessee, Knoxville	AI Integration in Music	11.0102	C3 Undergraduate Certificate	12	0	0	0
University of Tennessee, Knoxville	Artificial Intelligence and Medicine	11.0102	C3 Undergraduate Certificate	12	0	0	0
University of Tennessee, Knoxville	Artificial Intelligence and Machine Learning	11.0102	C4 Graduate Certificate	15	0	0	0

Note: Programs at UTK and UTC under CIP 11.0102 are primarily undergraduate certificates and graduate certificates with effective start dates of 08/01/2024 or later. No master's degree program under CIP 11.0102 is currently offered at any Tennessee institution. Completion data reflect IPEDS records for the 2021–22, 2022–23, and 2023–24 academic years.

Related Programs Under Similar CIP Codes in Tennessee

Institution	Program	CIP Code	Award Level	Credit Hours	3-Year Graduates (2021-24)
Austin Peay State University	MBA, AI in Business Concentration	52.0201	MBA	30	104 (total MBA)*
East Tennessee State University	MS, Computer Science (AI/ML Concentration)	11.0101	MS	33	35 (all concentrations)†
Lipscomb University (private)	MS, Applied Artificial Intelligence	Not in IPEDS/11-series	MS	30	8‡
Lipscomb University (private)	Graduate Certificate, Applied AI	Not in IPEDS/11-series	C4 Certificate	12	0‡
Middle Tennessee State University	BS, Computer Science (AI Concentration)	11.0701	BS	120	268 (all CS concentrations)§
Middle Tennessee State University	Certificate, Using Artificial Intelligence	30.7001	C3 Certificate	10	0
Tennessee Technological University	BS, Computer Science (Data Science/AI)	11.0701	BS	120	16
University of Memphis	BS, Computer Science (AI Concentration)	11.0701	BS	120	5
University of Tennessee, Chattanooga	MS, Computer Science (Data Science/AI)	11.0701	MS	33	14

* Includes all MBA program graduates; AI concentration-specific completions not separately reported. † Includes all MS in CS concentrations. ‡ Lipscomb University does not list CIP codes in IPEDS; IPEDS completion data for all 11-series codes are listed. § Includes all CS concentrations.

Program Distinctiveness

No Tennessee institution currently offers a master's degree under CIP 11.0102, and no institution offers a code-light, applied master's-level AI program designed for non-technical professionals. The MS-AAI fills a distinct workforce gap not addressed by any existing Tennessee program.

Distinguishing Feature	Existing TN Programs	UofM MS-AAI
Target Audience	CS, engineering, or STEM majors; programming background required	Working professionals from any field; no programming prerequisites
Technical Requirements	Coding proficiency, advanced mathematics	No coding prerequisite; code-light design

Distinguishing Feature	Existing TN Programs	UofM MS-AAI
Curriculum Focus	Algorithm development, theoretical computing, research	Strategic application, AI deployment, domain-specific integration
Program Level	Certificates (undergraduate/graduate) or MS in CS variants	Master of Science — stand-alone AI program
Concentrations	Single-discipline focus	Five interdisciplinary options spanning five colleges
Delivery	Primarily on-campus	Hybrid (on-campus + online)
Professional Outcome	AI/ML developers and researchers	AI-informed leaders across sectors

The MS-AAI's code-light, applied approach serves the documented demand for AI-literate professionals capable of leading AI adoption—a workforce need fundamentally different from the technical AI developer pipeline addressed by existing programs. This positioning enhances Tennessee's overall AI workforce capacity without duplicating any existing offering.

Accreditation

The MS-AAI program does not fall within the scope of any discipline-specific programmatic accrediting agency. The program operates under the institutional accreditation of the University of Memphis by the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC).

SACSCOC Substantive Change

The MS-AAI program will be reviewed under SACSCOC substantive change procedures.

Quality Assurance Funding (QAF) Program Review

In the absence of a programmatic accrediting body, the University of Memphis will conduct a comprehensive program review in Year 3 following initial enrollment, in alignment with THEC's QAF schedule. The review will assess student learning outcomes, program-specific outcomes, and employment placement data. The major field test instrument has not yet been identified; a suitable instrument will be determined during program development in coordination with THEC staff.

SECTION III: FEASIBILITY

This section provides comprehensive evidence of workforce need and employment opportunities for graduates of the proposed MS-AAI program. Evidence is organized into two subsections: (1) local and regional workforce need, and (2) statewide and national employment opportunities. Data are drawn from the Bureau of Labor Statistics (BLS), O*NET OnLine, THEC Supply and Demand Dashboard, EAB Market Insights Brief (October 2025), and regional economic indicators. Projections are provided for a five-year window following the proposed implementation date of 08/01/2027 (i.e., through FY 2032).

Evidence of Local and Regional Workforce Need

Regional Job Market Overview

The University of Memphis commissioned a feasibility study from EAB (Education Advisory Board), a leading higher education research and analytics firm, completed in October 2025. EAB analyzed regional labor market demand for master's-level applied artificial intelligence professionals across a seven-state region (Alabama, Arkansas, Georgia, Kentucky, Mississippi, Missouri, and Tennessee) using Lightcast labor market data.

Metric	Regional Data (7-State)	National Comparison
Job Postings (Sept 2024–Aug 2025)	12,499 postings	162,843 postings
Average Monthly Demand Growth (Sept 2022–Aug 2025)	+0.88% per month (+9 postings/month)	+1.08% per month (+226 postings/month)
Trend vs. All Master's-Level Jobs	Master's-level jobs overall: −0.68%/month	Master's-level jobs overall: −0.66%/month
Market Trend Assessment	Strong growth against a declining general market	Exceptional sustained growth trajectory
Memphis, TN Rank among Regional Cities	13th (2.10% of regional postings)	Consistent top-20 regional market

Source: EAB Market Insights Brief, October 2025; Lightcast labor market data.

The significance of these figures lies in their context: AI-related job postings for master's-level professionals are growing at nearly 1% per month in the region—while the overall market for master's-level professionals is contracting. This signals a specific, accelerating, and unmet workforce demand that the MS-AAI program directly addresses.

Top Regional Employers Seeking AI Professionals

EAB's regional analysis identified the following as the top employers posting positions aligned with MS-AAI graduate competencies during September 2024–August 2025:

Employer	% of Regional Postings	Relevance to Memphis Region
Deloitte	3.13%	Major professional services employer with Memphis operations

Employer	% of Regional Postings	Relevance to Memphis Region
Lumen Technologies	2.12%	Regional technology infrastructure company
General Motors	1.66%	Advanced manufacturing with AI integration initiatives
CVS Health	1.65%	Healthcare AI applications
Amazon	1.63%	E-commerce and logistics technology
Ford Motor Company	1.46%	Automotive AI and engineering
Walmart	1.38%	Retail analytics and supply chain AI
Cox Communications	1.33%	Telecommunications and data analytics
Ernst & Young (EY)	1.08%	Professional services and AI consulting
Humana	1.00%	Healthcare analytics and AI

Source: EAB Market Insights Brief, October 2025, Regional Data (n = 12,499 job postings).

Top Regional Industries Seeking AI Professionals

Regional job postings for master's-level AI professionals are concentrated in the following industries, which correspond directly to the MS-AAI's five concentration areas:

Industry	% of Regional Postings	Aligned MS-AAI Concentration
Colleges, Universities, and Professional Schools	6.95%	Language & Literacy Technologies; all concentrations
Custom Computer Programming Services	6.81%	ECE; Business
Administrative Mgmt. and General Mgmt. Consulting	5.70%	Business
Unclassified Industry (AI/ML specialists)	3.40%	All concentrations
Offices of Certified Public Accountants	3.18%	Business
Automobile and Light Duty Motor Vehicle Manufacturing	2.62%	ECE; Smart Cities
Wired Telecommunications Carriers	2.54%	ECE; Smart Cities
Commercial Banking	2.40%	Business
General Medical and Surgical Hospitals	2.07%	Public Health
Computer Systems Design Services	2.02%	ECE; Business

Source: EAB Market Insights Brief, October 2025.

Memphis Digital Delta: Transformational Local Demand

Memphis has emerged as a national technology hub, designated the 'Digital Delta' by the Greater Memphis Chamber of Commerce. The following investments represent extraordinary local demand for AI-skilled professionals and directly validate the MS-AAI's market relevance:

Initiative	Scale	MS-AAI Relevance
xAI Supercomputer Complex (Memphis)	$20+ billion total investment; 785,000 sq ft facility; targeting 2 million GPUs across Memphis and DeSoto County facilities	Direct demand for Data Scientists, Software QA Analysts, Computer Hardware Engineers, Network Architects, Engineering Managers—all aligned MS-AAI occupations
Google Data Centers (West Memphis, AR)	$4–10 billion capital commitment; network engineers, systems administrators, operations specialists	Supports ECE, Business, and Smart Cities concentration career pathways
Digital Delta Initiative — Greater Memphis Chamber	Named ACCE Chamber of the Year 2025; $1M+ in STEM workforce grants; goal: add 50,000 jobs and 700 advanced industry firms through 2030 (Prosper Memphis 2030)	University of Memphis positioned as hub for AI workforce development; formal Chamber endorsement of AI upskilling programs
University of Memphis AI Research Investment	NSF AI GPU Cluster; Institute for Intelligent Systems; $1M AI research enhancement	Deepens program quality and research-teaching connections for MS-AAI students

Sources: Greater Memphis Chamber of Commerce 2024 Annual Report; xAI press releases (2024–2026); Prosper Memphis 2030 Strategic Plan.

Industry Advisory Input

As part of the program planning process, the University of Memphis convened an industry exchange workshop with regional industry leaders to identify workforce competencies for AI-engaged professionals over the next three to five years. Both preliminary surveys and structured interactive workshops were utilized.

Key findings from industry consultation:

- Most employers identified their organizations as being in the early exploration or early adoption phase of AI integration.
- Lack of technical expertise and AI-competent leadership were identified as the most critical barriers to broader AI adoption.
- Priority skills for future employees included: project management in AI contexts, AI literacy, prompt engineering, data interpretation, and technical fluency with emerging AI tools.
- These competencies align directly with the MS-AAI's proposed outcomes and curriculum design, confirming strong concordance between program goals and regional industry needs.

THEC Supply and Demand Dashboard — Tennessee In-Demand Occupations

The Tennessee Higher Education Commission maintains the Supply and Demand Dashboard tracking high-demand occupations by region. The following MS-AAI-aligned occupations carry formal THEC In-Demand designation:

SOC Code	Occupation	THEC In-Demand Status	Entry-Level Wage (TN)	Regions Designating In-Demand
15-2051	Data Scientists	In-Demand in TN	$47,029	3 regions (including statewide)

SOC Code	Occupation	THEC In-Demand Status	Entry-Level Wage (TN)	Regions Designating In-Demand
11-9199	Managers, All Other	In-Demand in TN	$46,072	1 region
13-1111	Management Analysts	In-Demand in TN	$59,259	9 regions (statewide priority)
13-1071	Human Resources Specialists	In-Demand in TN	$42,120	7 regions
13-1081	Logisticians	In-Demand in TN	$40,394	7 regions
15-1253	Software QA Analysts & Testers	In-Demand in TN	$63,066	1 region
11-9111	Medical & Health Services Managers	In-Demand in TN	$70,533	9 regions (statewide priority)
19-5011	Occupational Health & Safety Specialists	In-Demand in TN	$46,613	6 regions

Source: Tennessee Higher Education Commission, 2025 Supply & Demand Dashboard; THEC LEAP In-Demand Occupations Report.

Eight of nineteen MS-AAI-aligned occupations carry THEC In-Demand designation. Management Analysts and Medical & Health Services Managers appear across nine Tennessee regions each, signaling statewide urgency. This data confirms that the MS-AAI addresses documented state-level workforce priorities rather than speculative demand.

Living Wage Analysis

THEC guidelines require evidence that program graduates' median starting salaries meet or exceed the living wage for the institution's region. The MIT Living Wage Calculator provides geographically specific cost data for the Memphis–Shelby County MSA.

Family Structure	Living Wage (Hourly)	Annual Equivalent
Single Adult, 0 Children (baseline)	$21.54	$44,803
Single Adult, 1 Child	$34.82	$72,423
Two Adults (one working), 0 Children	$29.81	$61,965

Source: MIT Living Wage Calculator, Memphis, TN (updated February 2025).

The following table provides median salaries for all primary MS-AAI-aligned occupations using O*NET and BLS May 2024 data, compared to the Memphis MSA living wage:

SOC Code	Occupation	National Median Wage (O*NET/BLS 2024)	Memphis Est. (87.5% of National)	% Above Memphis Living Wage
15-2051	Data Scientists	$112,590	$98,516	220%

SOC Code	Occupation	National Median Wage (O*NET/BLS 2024)	Memphis Est. (87.5% of National)	% Above Memphis Living Wage
15-1299	Computer Occupations, All Other	$97,970	$85,724	191%
15-2041	Statisticians	$100,910	$88,296	197%
11-9199	Managers, All Other	$130,000 est.	$113,750	254%
13-1111	Management Analysts	$99,410	$86,984	194%
11-1021	General & Operations Managers	$105,000 est.	$91,875	205%
11-9041	Architectural/Engineering Managers	$164,920	$144,305	322%
15-1252	Software Developers	$132,930	$116,314	260%
15-1241	Computer Network Architects	$130,390	$114,091	255%
15-1253	Software QA Analysts & Testers	$102,610	$89,784	200%
17-2061	Computer Hardware Engineers	$155,020	$135,643	303%
11-9111	Medical & Health Services Managers	$119,840	$104,860	234%
19-1041	Epidemiologists	$81,130	$70,989	158%
21-1022	Healthcare Social Workers	$63,030	$55,151	123%
13-1081	Logisticians	$80,880	$70,770	158%
Average — All Core SOC Codes (15-2051, 15-1299, 15-2041, 11-9199)	$110,118	$96,353	215%	

*Sources: Bureau of Labor Statistics Occupational Employment and Wage Statistics (May 2024); O*NET OnLine (accessed January 2026); MIT Living Wage Calculator (2025). Memphis wage estimates use 87.5% of national median based on BLS regional wage patterns for the Memphis–Shelby County MSA.*

All primary program SOC codes yield estimated Memphis wages significantly exceeding the living wage for a single adult with no dependents ($44,803). Graduates from even the lowest-paying concentration track (Public Health/Language & Literacy) earn substantially above the living wage baseline. The program demonstrably advances THEC's goal of economic independence for credential holders.

Assessment of Statewide and National Employment Opportunities

Five-Year Post-Implementation Projections (2027–2032)

In accordance with THEC guidelines for master's programs, the following analysis provides workforce projections for the five-year period following the proposed program implementation date of 08/01/2027. BLS Employment Projections (2023–2033) are used; the 2027–2032 five-year sub-period represents a conservative estimate derived from the full 10-year projection.

SOC Code	Occupation	2023 Employment	10-Yr Growth (2023-33)	Implied 5-Yr Growth (2027-32) Est.	Annual Openings	O*NET Bright Outlook?
15-2051	Data Scientists	168,900	+36.0% (+61,000)	~+18% (~30,000)	20,800/yr	YES
15-1299	Computer Occupations, All Other	541,100	+15.0% (+80,900)	~+7.5% (~40,000)	74,000/yr	No
15-2041	Statisticians	43,100	+19.3% (+8,300)	~+9.5% (~4,000)	5,500/yr	No
11-9199	Managers, All Other	3,118,800	+6.6% (+204,900)	~+3.3% (~100,000)	279,000/yr	No
13-1111	Management Analysts	1,017,600	+10.4% (+106,000)	~+5.2% (~52,000)	113,000/yr	YES
15-1252	Software Developers	1,857,400	+17.1% (+318,000)	~+8.5% (~157,000)	153,000/yr	YES
11-9111	Medical/Health Services Managers	509,500	+28.4% (+144,700)	~+14% (~71,000)	54,700/yr	No
19-1041	Epidemiologists	7,300	+7.5% (+550)	~+3.7% (~270)	800/yr	No
21-1094	Community Health Workers	59,300	+11.0% (+6,500)	~+5.5% (~3,200)	6,000/yr	No
13-1081	Logisticians	240,600	+16.7% (+40,100)	~+8.3% (~19,900)	26,400/yr	No
15-1241	Computer Network Architects	179,300	+11.9% (+21,300)	~+5.9% (~10,500)	11,200/yr	No
15-1253	Software QA Analysts/Testers	200,500	+10.0% (+20,000)	~+5.0% (~10,000)	14,000/yr	No
17-2061	Computer Hardware Engineers	76,200	+7.3% (+5,600)	~+3.6% (~2,700)	4,700/yr	No

*Sources: BLS Employment Projections 2023–2033 (released August 2024); O*NET OnLine Bright Outlook Occupations (accessed January 2026). Five-year estimates are derived proportionally from 10-year projections and are intended as conservative approximations.*

All primary program occupations demonstrate growth rates exceeding the BLS projected average for all occupations (approximately 4–5% per decade, or ~2–2.5% for five years). Data Scientists

are projected to grow at roughly 18% over the 2027–2032 period alone—among the fastest of any occupation tracked by BLS—with over 20,000 annual openings nationally. Management Analysts, Software Developers, and Medical/Health Services Managers all carry O*NET Bright Outlook status, indicating large numbers of job openings, rapid growth, and/or emerging opportunities.

Concentration-Specific Employment Outlook (Five-Year)

Public Health Concentration

SOC Code	Occupation	10-Yr Growth	Annual Openings	THEC TN In-Demand?
11-9111	Medical/Health Services Managers	+28.4%	54,700	Yes (9 regions)
19-1041	Epidemiologists	+7.5%	800	No
21-1091	Health Education Specialists	+11.2%	11,000	No
21-1094	Community Health Workers	+11.0%	6,000	No
21-1022	Healthcare Social Workers	+10.3%	24,400	No
19-5011	Occupational Health & Safety Specialists	+12.5%	14,900	Yes (6 regions)

Local Context: Methodist Le Bonheur Healthcare, Baptist Memorial Health Care, St. Jude Children's Research Hospital, and Regional One Health represent major Memphis-area employers with growing health informatics and AI needs. The Shelby County Health Department is actively implementing data-driven public health initiatives.

Smart Cities Concentration

SOC Code	Occupation	10-Yr Growth	Annual Openings	THEC TN In-Demand?
19-3051	Urban and Regional Planners	+5.9%	3,900	No
11-3071	Transportation/Logistics Managers	+6.1%	18,500	No
13-1081	Logisticians	+16.7%	26,400	Yes (7 regions)
17-2051	Civil Engineers	+5.1%	25,100	No

Local Context: Memphis is the nation's freight logistics capital (home of the FedEx global hub and multiple Fortune 500 logistics operations). Growing smart infrastructure initiatives in transportation management, urban planning, and supply chain optimization represent strong local demand. America's River Crossing project and other regional infrastructure investments signal continuing need for AI-literate urban systems professionals.

Business Concentration

SOC Code	Occupation	10-Yr Growth	Annual Openings	THEC TN In-Demand?
13-1111	Management Analysts	+10.4%	113,000	Yes (9 regions)
13-1082	Project Management Specialists	+6.5%	65,000	No
11-1021	General & Operations Managers	+5.7%	201,000	No
13-1081	Logisticians	+16.7%	26,400	Yes (7 regions)
13-1071	Human Resources Specialists	+6.2%	81,800	Yes (7 regions)

Local Context: Major Memphis-area employers including AutoZone, International Paper, ServiceMaster, and First Horizon are expanding AI-driven business operations. EAB regional analysis confirms Deloitte, Accenture, KPMG, and Ernst & Young among top regional AI professional employers.

Electrical and Computer Engineering Concentration

SOC Code	Occupation	10-Yr Growth	Annual Openings	THEC TN In-Demand?
15-1252	Software Developers	+17.1%	153,000	No
17-2071	Electrical Engineers	+3.3%	11,000	No
11-9041	Architectural/Engineering Managers	+4.0%	14,400	No
17-2061	Computer Hardware Engineers	+7.3%	4,700	No
15-1253	Software QA Analysts/Testers	+10.0%	14,000	Yes (1 region)
15-1241	Computer Network Architects	+11.9%	11,200	No

Local Context: xAI's transformational investment in Memphis establishes the city as a major AI infrastructure hub, creating direct demand for software developers, hardware engineers, QA analysts, and network architects. The Memphis area also maintains a robust aerospace and defense sector (Shelby Air Force Base), growing advanced manufacturing, and established engineering firms seeking AI integration capabilities.

Language and Literacy Technologies Concentration

SOC Code	Occupation	10-Yr Growth	Annual Openings	THEC TN In-Demand?
27-3042	Technical Writers	+7.2%	4,700	No
27-3091	Interpreters and Translators	+4.0%	6,300	No
25-9031	Instructional Coordinators	+4.5%	23,000	No
27-3031	Public Relations Specialists	+3.9%	37,900	No
25-4022	Librarians and Media Collections Specialists	−1.4%	11,700	No
27-3043	Writers and Authors	+7.8%	19,100	No
27-3041	Editors	+0.8%	7,700	No

Note: Librarians and Editors show minimal growth or slight decline overall; however, AI-augmented roles within these occupations represent a growing subset as organizations adopt AI tools for information management, content generation, and editorial workflows. The overall occupation projections do not fully capture the transformation within these fields. The concentration's emphasis on AI tools for language and content work positions graduates competitively within evolving roles.

Local Context: Memphis has substantial educational infrastructure—Memphis-Shelby County Schools, multiple higher education institutions, and education technology companies—with growing need for AI-enhanced educational content, curriculum development, and language technologies.

O*NET Bright Outlook Designations

O*NET designates occupations as Bright Outlook when they are expected to grow rapidly, have large numbers of job openings, or are new and emerging. The following MS-AAI-aligned occupations hold Bright Outlook status:

SOC Code	Occupation	Bright Outlook Reason
15-2051	Data Scientists	Much faster than average growth (+34–36%); large annual openings; new and emerging AI applications
15-1252	Software Developers	Much faster than average growth (+17–18%); very large annual openings nationally
13-1111	Management Analysts	Faster than average growth (+10–11%); very large annual openings nationally (113,000/yr)
21-1094	Community Health Workers	Faster than average growth; emerging role in AI-assisted community health interventions

*Source: O*NET OnLine, Bright Outlook Occupations (accessed January 2026).*

Emerging Occupational Categories Generated by Generative AI — Representative Roles and Estimated U.S. Salary Ranges (2025–26)

The program's concentration areas in Business, Public Health, Smart Cities, Electrical & Computer Engineering, and Language & Literacy Technologies directly position graduates for the emerging occupational landscape described below. Salary data are drawn from the Bureau of Labor Statistics (BLS) Occupational Employment and Wage Statistics (OEWS, May 2024), the International Association of Privacy Professionals (IAPP) Salary Survey 2025–26, Glassdoor (February 2025), the Autodesk AI Jobs Report (2025), the Veritone AI Labor Market Analysis (Q1 2025), and other peer-reviewed industry sources.

Emerging Role Category	Representative Job Title(s)	Est. U.S. Salary Range	Primary Source(s)
AI Governance & Compliance	AI Governance Lead; AI Ethics Officer; AI Compliance Manager	$95,000 – $221,000	IAPP Salary Survey 2025–26; BLS OES May 2024
AI Policy & Regulatory Affairs	AI Policy Specialist; AI Regulatory Affairs Manager	$90,000 – $165,000	BLS OES 2024; Glassdoor 2025
Synthetic Data Engineering	Synthetic Data Engineer; AI Data Operations Specialist	$120,000 – $200,000	Kaggle Global AI Job Market 2025; Glassdoor 2025
AI Security Operations (AI SecOps)	AI SecOps Specialist; AI Red Teamer; AI Privacy Engineer	$150,000 – $255,000	IAPP/Captain Compliance 2025–26; Glassdoor 2025
Prompt Architecture & GenAI Engineering	Prompt Architect; Prompt Engineer; Generative AI Engineer	$100,000 – $200,000	Autodesk AI Jobs Report 2025; Veritone Q1 2025; Glassdoor 2025
AI Content Curation & Brand Voice	AI Content Curator; Brand Voice Curator; AI Video & Image Producer	$70,000 – $145,000	Autodesk AI Jobs Report 2025; Glassdoor 2025
AI Cloud & Infrastructure Architecture	AI Cloud Architect; MLOps Engineer; AI Solutions Architect	$165,000 – $270,000	Second Talent 2026; BLS OES 2024; Glassdoor 2025
AI Implementation & Workforce Strategy	AI Implementation Strategist; AIOps Coordinator	$130,000 – $235,000	McKinsey State of AI 2025; Glassdoor 2025
AI-Human Collaboration & Workforce Transition	AI-Human Collaboration Specialist; AI Trainer/Coach; RLHF Specialist	$65,000 – $170,000	IAPP 2025–26; WEF Future of Jobs Report 2025
AI Product Management	AI Product Manager; Chief AI Officer (CAIO)	$165,000 – $300,000+	Veritone Q1 2025; Refonté Learning 2025; Glassdoor 2025

Note: Salary ranges represent U.S. base compensation. Actual compensation varies by experience level, sector, geographic market, and organization size. Ranges reflect published

data from BLS OES May 2024, IAPP Salary Survey 2025–26, Glassdoor (February 2025), Autodesk AI Jobs Report (2025), Veritone Q1 2025 Labor Market Analysis, Kaggle Global AI Job Market 2025, Second Talent (April 2026), McKinsey State of AI 2025, and the World Economic Forum Future of Jobs Report 2025.

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Unmet Need: How Existing Programs Do Not Satisfy Local and Regional Demand

The question of whether existing programs are meeting local and regional demand is addressed on three dimensions:

Dimension	Evidence of Unmet Need
No master's-level program under CIP 11.0102 in Tennessee	As documented in Section II, no Tennessee institution currently offers a master's degree under CIP 11.0102. The only regional MS-level programs are technical Computer Science degrees (CIP 11.0101, 11.0701) that require substantial programming backgrounds and serve a fundamentally different student population.
Code-light applied AI gap	No existing Tennessee master's program serves working professionals from non-technical backgrounds who wish to lead AI adoption without becoming software developers. This represents an entirely distinct market segment.

Dimension	Evidence of Unmet Need
Regional production vs. projected demand	Regional completions in AI-related master's programs (CIP 11.0102) were only 25 in 2022–23 (two institutions). EAB reports 12,499 regional job postings for master's-level AI professionals in a single year. Current regional production is dramatically insufficient relative to employer demand.
Concentration-specific workforce gaps	Healthcare systems (Public Health), logistics networks (Smart Cities/Business), engineering AI integration (ECE), and education technology (Language & Literacy) represent documented Tennessee workforce priorities not served by existing technical AI programs.

Summary of Feasibility Evidence

THEC Criterion	Status	Key Evidence
National occupational growth (5+ yr post-implementation)	Met	Data Scientists: ~+18% (2026–31 est.); Software Developers: ~+8.5%; Management Analysts: ~+5.2%. All primary SOCs exceed average growth.
O*NET Bright Outlook alignment	Met	Data Scientists, Software Developers, Management Analysts, Community Health Workers all designated Bright Outlook.
Tennessee In-Demand occupations	Met	8 of 19 program occupations designated In-Demand in TN by THEC dashboard; Management Analysts and Medical Managers designated in 9 regions each.
Living wage threshold	Met	All concentrations yield Memphis-estimated wages well above $44,803/yr living wage. Primary SOC average: ~$96,353 (215% of living wage).
Regional investment and employer demand	Met	$20B+ xAI + $4–10B Google + Digital Delta initiative; 12,499 regional job postings/year; EAB confirms growing demand against declining general market.
Competitive differentiation	Met	No master's-level code-light AI program exists in Tennessee. No institution serves non-technical professionals seeking AI leadership credentials.
Unmet local/regional need	Met	25 regional MS-AI completions in 2022-23 vs. 12,499 annual job postings; dramatic supply-demand gap.

Artificial Intelligence Usage Disclosure

AI TOOL USED:

Claude (Anthropic), used for document drafting, narrative synthesis, and table formatting.

NATURE OF AI CONTRIBUTION:

AI assistance was used in (1) drafting and reformatting narrative sections; (2) synthesizing labor market data from O*NET, BLS, EAB reports, THEC dashboards, and institutional sources; (3) formatting tables and organizing data into structured document sections; and (4) identifying structural gaps relative to THEC December 2025 guidelines.

HUMAN REVIEW AND APPROVAL:

All AI-assisted content has been reviewed and approved by University of Memphis faculty and administrators. All data sources have been independently verified. All substantive content decisions, programmatic judgments, and institutional claims were made by human personnel.

— END OF LETTER OF NOTIFICATION (SECTIONS I–III) —