# Framework for Artificial Intelligence Program Endorsement Guidelines

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Forum Building, 607 South Drive
Harrisburg, PA 17120
www.education.pa.gov

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## Definition of an Endorsement Certificate

Following approval by the Department, baccalaureate, or graduate degree-granting institutions, alone or in cooperation with other institutions, community colleges or school entities, may offer short programs (12 credits) that lead to the Program Endorsement. The Program Endorsement documents knowledge in new and emerging areas where formal certification does not exist. The Program Endorsement is intended to improve a teacher's skills in dealing with complex classroom settings. These endorsements are added to existing Level I or Level II Certificates but are not required to perform service in these areas.

## Introduction to Artificial Intelligence Endorsement Guidelines

This document describes the professional knowledge, skills, and competencies that candidates will learn by completing a prescribed sequence of courses (including field experiences). In addition to specific requirements and competencies, these guidelines discuss the Artificial Intelligence Endorsement program design, candidate competencies, field experiences, and any prerequisite certificates needed by the candidate.

## Overview of Artificial Intelligence Endorsement

Artificial Intelligence (AI) in education refers to the use of computational systems that replicate human cognitive functions, such as learning, reasoning, and problem-solving, within educational contexts (Russell & Norvig, 2016). The interdisciplinary nature of AI has fueled rapid growth, transforming how students learn and how educators teach (Charles & Hill, 2023). This transformation is evident in a growing body of research exploring AI's educational applications (Azzam & Charles, 2024). As AI continues to shape curriculum design, instructional strategies, and assessment methods (McArthur, Lewis, & Bishary, 2005), effectively defining and implementing its role in education remains a critical priority. Recent policy developments, such as the U.S. Department of Education's 2024 AI implementation guidelines and the White House's 2025 executive directive *Advancing Artificial Intelligence Education for American Youth,* reflect a growing recognition of the need for ethical, transparent, and socially responsive uses of AI in educational institutions (U.S. Department of Education, 2024; Executive Order No. 14277, 2025). These measures underscore the critical importance of cultivating AI literacy among educators and learners alike.

Given the evolving nature of AI in education and its growing influence on society, there is an urgent need to equip both educators and students with the skills and knowledge to engage with AI critically and effectively. Teachers and students alike need to understand the implications of AI so they can contend with both its harms and its benefits in educational and societal contexts (Chen, et al., 2020; Hrastinski, et al., 2019; Hwang, et al., 2020). To meet this challenge, educators must be more than just familiar with AI technologies, they should be able to use them thoughtfully to design more engaging and impactful learning environments. Moreover, as AI becomes more prevalent in classrooms, teachers must be prepared to guide students in effectively using AI tools and in critically evaluating issues such as algorithmic fairness, data privacy, and the transparency of automated decisions (Holmes, et al., 2023). Integrating

AI education into curricula from an early stage is therefore vital, not only to prepare students for a workforce shaped by AI, but also to promote equity and inclusion by addressing disparities in access, understanding, and participation (Salas-Pilco, et al., 2022).

To meet the growing need for AI literacy in schools, there is an increasing demand for educators who are not only familiar with AI technologies but also capable of applying them to enhance teaching and learning. However, despite AI's increasing presence in education, there are currently no professional organizations that have established specific standards for its use in PK–12 settings. To address this gap, a proposed set of standards is outlined below as part of the AI Endorsement Program. These standards are designed to ensure that educators are well-prepared to integrate AI meaningfully into their teaching, equipping students to navigate both the opportunities and challenges of an AI-driven world.

This document has been created to provide the **Artificial Intelligence Program Endorsement Competencies.** To develop an Artificial Intelligence Preparation Program for this endorsement, EPPs should utilize the material contained in this document.

## Program Design and Delivery

The professional core courses and experiences for the Artificial Intelligence Endorsement Program must be designed to address the specific set of issues, knowledge, and competencies that are relevant to teaching and learning. The program must prepare educators who will be able to support students' mastery of academic standards and the content assessment anchors. The program design must describe clearly how the relevant set of knowledge, skills, and competencies inform the program design, and the application must also indicate how the institution will assess whether candidates have acquired the required knowledge, skills, and competencies.

The program must consist of coursework to meet the required competencies and field experience requirements of an endorsement program. All courses (12 credits maximum) must be grounded in theories of cognitive, emotional, and social development and demonstrate research-based practices which enable candidates to gain the knowledge and experience needed to navigate the complexities of AI in education, ensuring they are equipped to utilize AI technologies effectively and ethically. The Artificial Intelligence endorsement establishes that eligible individuals will demonstrate competencies related to the following key domains:

I. Foundations of AI and Its Applications
II. Ethical and Responsible AI Use
III. AI for Teaching and Assessment
IV. AI Literacy for Students
V. AI Leadership and Innovation in Schools
VI. AI's Role in Human and Societal Thriving

By meeting these competencies, educators can offer students a rich, adaptive, and forward-thinking educational experience that aligns with the demands of the 21st century.

## Field Experiences

In order to ensure the consistency of field experiences with course content and the 12-credit requirement, field experiences will be integrated into course content. The program will include a capstone field experience that appropriately synthesizes and applies program instruction in a real-world context. Candidates will work with program advisors to secure a PK-12 school partner for this experience. The experience can be tailored and differentiated to match the candidates' professional goals related to their desired role(s) within a PK-12 system. The field experience will contain adequate rigor that demonstrates practical application of coursework and provides new opportunities for professional growth.

## Candidate Competencies

The Professional Core courses, competencies, and experiences for the Artificial Intelligence (AI) in PK-12 Education Endorsement Program are designed to address the comprehensive set of issues, knowledge, and competencies that are relevant to integrating AI in teaching and learning. The program includes core competencies for AI instruction that align with the proposed standards for effective AI use in education. The Artificial Intelligence (AI) in PK-12 Education Endorsement establishes that eligible individuals will demonstrate competency related to the following key domains:

### Domain 1: Foundations of AI and Its Applications

Candidates develop a foundational understanding of AI concepts, models, and education-specific applications to integrate AI effectively into teaching and learning.

Candidates will be able to:

- Explain fundamental AI concepts, including ***agentic,*** generative, predictive, and adaptive models, and analyze their current and potential impact on education.
- Define key AI terms, examine their historical development, and describe the high-level processes behind large language models, machine learning, and emerging AI technologies in education.
- Evaluate the strengths and limitations of AI systems within an educational context, including issues of bias, accuracy, and misinformation.
- Analyze how AI integration transforms teacher roles, instructional decision-making, and professional identity, balancing automation with human pedagogy.

### Domain 2: Ethical and Responsible AI Use

Candidates examine ethical considerations of AI, including bias, privacy, and equitable access, to promote responsible and informed decision-making in educational settings.

Candidates will be able to:

- Analyze terms of service and data usage policies of AI-powered educational platforms to assess their alignment with ethical guidelines and privacy regulations (e.g., FERPA, COPPA).
- Confront AI's potential societal impact by examining both its benefits and risks beyond academic integrity concerns.
- Identify and differentiate types of bias in AI models, including those present in training data, algorithms, outputs, and user interactions.
- Demonstrate responsible AI decision-making by recognizing when to leverage AI assistance and when to prioritize human judgment and creativity.
- Advocate for equitable AI integration in education, ensuring AI tools enhance learning opportunities rather than reinforce existing disparities.

**Domain 3: AI for Teaching and Assessment**
Candidates explore how AI enhances instructional design, personalized learning, and assessment while maintaining a balance between automation and human expertise.

Candidates will be able to:

- Integrate AI tools into lesson planning, curriculum development, and assessments to align with educational standards.
- Evaluate how AI-powered multimodal tools can support inclusive and accessible personalized learning for all learners, including those with disabilities, multilingual learners, and neurodiverse students.
- Apply evidence-based practices to use AI for delivering timely and meaningful student feedback and personalized support.
- Interpret AI-generated learning analytics to refine instructional strategies, identify learning gaps, and adjust pacing.
- Analyze emerging AI trends to adapt teaching practices and prepare students for evolving career landscapes.

**Domain 4: AI Literacy for Students**
Candidates develop strategies to foster AI literacy, critical thinking, and responsible AI use among students to prepare them for academic and workforce readiness.

Candidates will be able to:

- Design AI literacy curricula that equip students with the skills to critically analyze AI-generated content and prepare for the workforce.
- Design learning experiences for students to formulate critical questions about AI's influence on media, research, and decision-making.
- Model strategies for navigating bias, misinformation, and ethical concerns while making informed decisions about AI tools.
- Create learning experiences that integrate AI to foster student creativity, innovation, and problem-solving.
- Model the balance of AI augmentation with human agency in academic and professional settings.

**Domain 5: AI Leadership and Innovation in Schools**
Candidates assess and implement AI-driven innovations in schools and districts to support ethical adoption, instructional transformation, and equitable access to technology.

Candidates will be able to:

- Assess school and district AI initiatives for alignment with instructional goals, ethical considerations, and equitable technology access.
- Assess AI policies and governance frameworks to determine their impact on student data privacy, security, and responsible AI use.
- Design professional learning sessions that equip educators to effectively integrate AI tools and literacies in schools and districts.
- Analyze AI-generated data and analytics to inform instructional planning and decision-making at the school or district level.
- Develop cross-curricular AI literacy strategies to support workforce readiness and emerging technology competencies.
- Develop AI integration strategies for curriculum design, school improvement plans, and district-wide initiatives.

**Domain 6: AI's Role in Human and Societal Thriving**
Candidates analyze AI's broader societal impact, considering its implications for governance, labor markets, cognitive development, and ethical human-AI collaboration.

Candidates will be able to:

- Evaluate the long-term impacts of AI on society, the job market, and workforce shifts, including its influence on governance, public policy, ethical decision-making, and emerging skill demands.
- Design and propose AI-driven solutions that address societal challenges—such as healthcare, environmental sustainability, and equitable access to resources—while prioritizing human well-being.
- Examine the relationship between AI and human creativity, identifying where AI enhances innovation and where it may impose limitations.
- Articulate the principles of human-AI complementarity, demonstrating how AI can augment human capabilities and serve as an effective partner in judgment, creativity, and ethical reasoning.
- Analyze the cognitive and psychological effects of AI usage and reliance. For example,
    - Examining how cognitive offloading to AI systems influences attention, memory, and problem-solving.
    - Impact on socialization, social-emotional well-being, and sense of belonging.
    - And other effects as AI evolves.

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## Resources

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