University Council

January 9, 2026

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Dear Colleagues:

The attached proposal from the Franklin College of Arts and Sciences for a new Undergraduate Certificate in Artificial Intelligence – Language, Minds, and Machines will be an agenda item for the January 16, 2026, Full University Curriculum Committee meeting.

Sincerely,

Susan Sanchez, Chair

cc: Provost Benjamin Ayers
Dr. Marisa Anne Pagnattaro

PROPOSAL FOR A CERTIFICATE PROGRAM

Date: September 11, 2025

School/College/Unit: Franklin College of Arts and Sciences
The Office of the Senior Vice President for Academic Affairs and Provost

Department/Division: Institute for Artificial Intelligence

Certificate Title: Artificial Intelligence - Language, Minds, and Machines

CIP: 11010203

Effective Term: Fall 2026

Which campus(es) will offer this certificate? Athens

Level (Undergraduate, Graduate, or Post-Baccalaureate): Undergraduate

Program Abstract:

The Undergraduate Certificate in Artificial Intelligence - Language, Minds, and Machines is intended to provide a foundation in the principles and techniques of artificial intelligence (AI), particularly as it relates to areas of linguistics, philosophy, and psychology, disciplines which play important roles in the ongoing development of AI. It will provide training enabling students to understand responsible use of AI models and study the contributions of key fields to modern AI. The certificate is suitable for students in STEM and non-STEM fields and is especially suited to those with limited computing background.

1. Purpose and Educational Objectives

State the purpose and educational objectives of the program. How does this program complement the mission of the institution?

Artificial intelligence is an interdisciplinary field with a history as old as modern computing itself. For much of its existence, however, its impact on society was relatively limited. This changed in the last decade, especially the last 5 years, as a confluence of theoretical advances, vastly improved computing resources, and massive amounts of data have led to widespread development and adoption of AI technologies. More than half of the U.S. adult population now use modern AI technologies daily, and nearly everybody is affected by AI.

While modern AI systems have experienced the fastest adoption of technology in history, and while their impact has been across sectors, existing educational programs generally do not include sufficient training in AI concepts and technologies from varied perspectives. AI has historically been taught as part of a computer science or engineering program. Given the adoption of AI technologies more broadly, however, there is a need for educating a wider student population.

The certificate is intended to help fulfill this need. It is suitable for students in diverse fields, including those in the humanities and social sciences, and it is designed to educate and train them in the responsible use of an increasingly important set of technologies. In that sense, the certificate is consistent with the mission of the University of Georgia, reflecting the core characteristic of "a commitment to excellence in a teaching/learning environment dedicated to serving a diverse and well-prepared student body, to promoting high levels of student achievement, and to providing appropriate academic support services."

2. Need for the Program

Explain why this program is necessary.

Interest in AI is arguably at the highest level it has ever been, both globally and in the United States. The 2025 AI Index indicates that "Business is all in on AI," with U.S. private investment totaling $109.1 billion.[1] The U.S. Census Bureau has recently included questions on AI use by businesses in its biweekly Business Trends and Outlook Survey, which tracks trends in sixteen sectors, including Information, Finance and Insurance, and Professional, Scientific, and Technical Services.[2,3] When considering all sectors, AI use rose from 3.7% in mid-2023 to 8.8% in the most recent 2025 survey. Adoption varies drastically by sector, with the Information sector showing current adoption of 21.4%. All sectors saw at least some increase in adoption over the 2-year period, however. In the public sector, a U.S. National Science Foundation (NSF) analysis published in May 2024 estimates that up to 3,400 new AI-skilled workers will be needed in federal agencies by 2028.[4]

Acknowledging the importance of AI and AI education, the U.S. President signed in April of 2025 an executive order "Advancing Artificial Intelligence Education for American Youth," intended to develop AI education opportunities at the K-12 level.[5]

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[1] https://hai.stanford.edu/ai-index/2025-ai-index-report
[2] https://www.census.gov/hfp/btos/about
[3] https://www.census.gov/hfp/btos/downloads/CES-WP-24-16.pdf
[4] https://www.nsf.gov/edu/Pubs/2024SFSAIReport.pdf
[5] https://www.whitehouse.gov/presidential-actions/2025/04/advancing-artificial-intelligence-education-for-american-youth/

At the post-secondary level, many universities have accelerated the development of both educational programs and academic policies related to AI, primarily spurred by the deployment of ChatGPT and other large language model systems in 2022. At UGA, there is ongoing work to develop an AI Literacy framework, consisting of Foundational Literacy, Proficient Literacy, and Expert AI Literacy, with all faculty, staff, and students expected to achieve the first level of literacy. The development of this framework is still underway, but it is expected that the proposed certificate would allow students to achieve at least the second level of literacy.

The Institute for Artificial Intelligence manages one existing undergraduate certificate related to AI, the Undergraduate Certificate in Artificial Intelligence - Computing, but that certificate is primarily suitable for those with a significant computing background . The Terry College of Business also offers an Undergraduate Certificate in Artificial Intelligence - Business, but that certificate requires admission to the Terry College of Business and consists of primarily MIS courses. The certificate proposed here has a more open focus and is intended to be suitable for students in a diversity of majors.

In addition, provide the following information:

a. Semester/Year of Program Initiation: **Fall 2026**
b. Semester/Year of Full Implementation of Program: **Fall 2026**
c. Semester/Year First Certificates will be awarded: **Spring 2027**
d. Annual Number of Graduates expected (once the program is established): **50**
e. Projected Future Trends for number of students enrolled in the program: **50**

3. Student Demand

a. Provide documentation of evidence of student demand for this program, including a student survey.

As evidence of the demand for AI, it is noted that enrollment in the graduate programs offered by the Institute for Artificial Intelligence is increasing. Table 1 shows the enrollment in the M.S. and Ph.D. AI programs over the last 5 years. While the numbers are those of graduate students, they nevertheless suggest that there is increased demand for AI education, including for multi-disciplinary programs such as those offered by the Institute. A significant proportion of the graduate students are returning UGA students. Of the 65 AI graduate students listed as current or else recently graduated, 26 (40%) were previously admitted into an AI Double Dawgs pathway. The certificate may encourage students to pursue existing Double Dawgs programs and continue their education at UGA.

Table 1. Spring Headcount, M.S. and Ph.D. in AI 2021-2025

	2021	2022	2023	2024	2025
Spring Enrollment (M.S. and Ph.D.)	30	37	44	44	57

Faculty expect enrollment for the proposed certificate to be similar to enrollment in The Undergraduate Certificate in Artificial Intelligence – Computing, which was announced in the summer of 2025 and began accepting students for Fall 2025. Forty-seven students have enrolled, the majority being Computer Science (B.S.) students. The courses of that certificate and their prerequisites make the certificate accessible primarily to students pursuing the Computer Science (B.S.) or Computer Systems Engineering (B.S.C.S.E.) degrees. While

faculty do not expect students from any one major to dominate the proposed certificate, it is anticipated that the overall enrollment will be comparable to that of the computing certificate.

To further gauge interest in the certificate, a survey was created and sent to the undergraduate coordinators or advisors to distribute to students in the following units:

- Department of Linguistics
- Department of Philosophy
- Department of Psychology
- Institute for Artificial Intelligence

Eighty-eight responses were received. Statistics for the survey questions are provided below.

Table 2. Results of Survey on AI Certificates

	Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
Q1. If this AI certificate is approved, I would consider pursuing it.	11 (13%)	4 (5%)	2 (2%)	33 (38%)	38 (43%)
Q2. The AI certificate would complement my chosen primary degree program.	8 (9%)	3 (3%)	11 (13%)	32 (36%)	34 (39%)
Q3. The AI certificate would provide skills I anticipate needing in my work after graduation.	7 (8%)	3 (3%)	13 (15%)	27 (31%)	38 (43%)
Q4. The AI certificate would increase my marketability, allowing me to better distinguish myself to future employers.	4 (5%)	2 (2%)	4 (5%)	28 (32%)	50 (57%)

The results are consistent with an earlier survey sent to a larger student body in the summer of 2024.[6] That survey assessed interest in AI certificates generally. Of the 222 respondents to that survey, 87% agreed or strongly agreed that they would consider pursuing an AI certificate if one was created.

The projected annual enrollment of 50 in the proposed certificate is based in part on the actual enrollment count in the Institute's active undergraduate AI certificate, in part on the number of survey respondents that strongly agreed with the survey questions, and that it targets a larger cohort of students spanning four units. Based on these data points, the faculty reasonably expects enrollment of about 50.

b. Provide evidence that demand will be sufficient to sustain reasonable enrollment.

Given the results of the surveys and the enrollment demand of the more specialized AI – Computing certificate, faculty believe that the certificate proposed here will attract sufficient students from humanities, social and behavioral sciences, and other non-computing backgrounds to warrant its continued support.

The Institute for Artificial Intelligence recently received approval for four new joint faculty

[6] The 2024 survey was sent to the departments of Chemistry, English, Geography, History, Linguistics, Management Information Systems, Philosophy, Physics and Astronomy, and Biological Sciences, and to the School of Computing, the School of Public and International Affairs, and the Mary Frances Early College of Education

positions, including an Assistant Professor in Linguistics and Artificial Intelligence (to be shared with the Department of Linguistics) and a Lecturer in Philosophy of Cognitive Science and Artificial Intelligence (to be shared with the Department of Philosophy). With these hires, it is anticipated that the Institute will have sufficient instructional resources to accommodate additional students, including in its certificate programs.

Furthermore, the proposed certificate is interdisciplinary with most of the foundational as well as elective courses taught in other participating departments. As such, the instructional load is spread across many units and not carried by the Institute alone.

4. Program of Study

All students completing the certificate are required to take a foundational course on AI theory and methods, a course on machine learning or formal reasoning, and a course addressing the social and ethical implications of AI. Students must also take courses in disciplines which have always been very important to AI as a field.

Provide a detailed program of study for the certificate program, including:

a. *Specific course prefixes, numbers, and titles*

At least 15 credit hours are required for the certificate. Some courses have MATH 1113, Precalculus, or other courses as prerequisites. Often, the prerequisites satisfy General Education requirements.

Students completing the certificate must earn a grade of "C-" (1.7) or better in each course taken for the certificate.

Foundational Courses (9 hours)

CSCI(PHIL) 4550/6550, Artificial Intelligence (3 hours)

Choose one of the following:

ARTI(PHIL) 2130, AI for Humans: Learning to Live with AI (3 hours)
ARTI(PHIL) 4340/6340, Ethics and Artificial Intelligence (3 hours)

Choose one of the following:

ARTI 4555/6555, Foundations of Machine Learning (3 hours)
PHIL(LING) 4510/6510, Deductive Systems (3 hours)

Electives (6 hours)

Choose any two courses from below.

Philosophy

ARTI(LING)(PSYC)(PHIL) 3550, Introduction to Cognitive Science (3 hours)
ARTI(PHIL) 4340/6340, Ethics and Artificial Intelligence (3 hours)*

PHIL(PSYC) 3400, Philosophical Psychology (3 hours)

PHIL 3510, Topics in Symbolic Logic (3 hours)

PHIL 3600, Metaphysics (3 hours)
PHIL 3610, Theory of Knowledge (3 hours)
PHIL(EETH) 4250/6250, Philosophy of Technology (3 hours)
PHIL(LING) 4300/6300, Philosophy of Language (3 hours)
PHIL 4310/6310, Philosophy of Mind (3 hours)
PHIL 4530/6530, Philosophy of Math (3 hours)
PHIL(LING) 4510/6510, Deductive Systems (3 hours)*
PHIL(LING) 4520/6520, Model Theory (3 hours)

Linguistics

ARTI(LING)(PSYC)(PHIL) 3550, Introduction to Cognitive Science (3 hours)
CMSD(LING) 3120, Study of Language Development (3 hours)
ENGL(LING) 4886/6886, Text and Corpus Analysis (3 hours)
LING 3060, Phonetics and Phonology (3 hours)
LING 3150W, Generative Syntax (3 hours)
LING 3160W, Advanced Generative Syntax (3 hours)
LING 3250, Morphology (3 hours)
LING 3350, Language, Mind, and Brain (3 hours)
LING 4022/6022, Advanced Phonetics and Phonology (3 hours)
LING 4105/6105, Psycholinguistics (3 hours)
LING 4106/6106, Advanced Psycholinguistic Theory (3 hours)
LING 4160/6160, Compositional Semantics (3 hours)
LING 4570/6570, Natural Language Processing (3 hours)
LING 4740/6740, Discourse Analysis (3 hours)
PHIL(LING) 4510/6510, Deductive Systems (3 hours)*

Psychology

ARTI(LING)(PSYC)(PHIL) 3550, Introduction to Cognitive Science (3 hours)
PHIL(PSYC) 3400, Philosophical Psychology (3 hours)
PSYC 4100, Cognitive Psychology (3 hours)
PSYC 4120, Sensation and Perception (3 hours)
PSYC 4130, Physiological and Comparative Psychology (3 hours)
PSYC 4140, Cognitive Neuroscience (3 hours)
PSYC 4200, Social Psychology (3 hours)
PSYC 4220, Developmental Psychology (3 hours)
PSYC 4230, Psychology of the Workplace (3 hours)
PSYC 5240, Judgment and Decision Making (3 hours)
PSYC 5780/7780, Animal Cognition (3 hours)

Other courses may be approved if chosen in consultation with the certificate coordinator.

* *If not taken as a foundational course.*

b. Identify any new courses created for this program.

No new courses are proposed for the program.

5. Model Program and Accreditation

a. Identify any model programs, accepted disciplinary standards, and accepted curricular practices against which the proposed program could be judged. Evaluate the extent to which the proposed curriculum is consistent with these external points of reference and provide a rationale for significant inconsistencies and differences that may exist.

In preparation for developing this and other certificates, a survey of AI undergraduate and graduate certificates offered by universities in the United States was conducted in 2024. The survey indicates that graduate and professional certificates outnumber undergraduate certificates, and among the undergraduate programs, most are oriented toward STEM fields; a minority are oriented towards non-programmers. The former typically do not require an ethics component, which the current proposal considers essential.

University of Georgia: The Institute for Artificial Intelligence offers the Undergraduate Certificate in Artificial Intelligence - Computing. The existing certificate significantly differs from the current proposal in that the courses of that certificate and their prerequisite chains make the certificate accessible primarily to students pursuing the Computer Science (B.S.) or Computer Systems Engineering (B.S.C.S.E.) degrees. The Terry College of Business also offers the Undergraduate Certificate in Artificial Intelligence - Business. That certificate requires admission to the Terry College of Business and features mainly Management Information Systems courses. There is some overlap of courses in the three certificates, but in general the certificates serve different communities. The electives and the required courses are largely different.

University System of Georgia: Clayton State University offers an online Certificate in Artificial Intelligence consisting of 9 hours of lower-level computing courses. It is also pre-baccalaureate, open to those with a high-school diploma or equivalent credential. The certificate proposed here is more interdisciplinary and includes courses at a more advanced level. The two certificates are not comparable.

University of Florida: The University of Florida offers several domain-specific AI certificates. The more general undergraduate certificate in AI Fundamentals and Applications is the closest certificate to the one proposed here. It requires a fundamental AI course, an ethics course, and a domain-specific elective. The elective is taken from one of many disciplines (Arts and Sciences, Business, Engineering, Education, etc.)

- Artificial Intelligence Fundamentals and Applications Certificate (9 hours)
- Artificial Intelligence in Public Health and Healthcare Certificate (9 hours)
- Geographic Artificial Intelligence and Big Data Certificate (12-13 hours)

Florida Atlantic University: The Artificial Intelligence Certificate (15 hours) provides two tracks: a programming track, and another track intended for students without programming experience. Despite the latter track, faculty do not view this certificate as comparable to the one proposed here. The certificate does not require an ethics course, and the courses are more focused on AI tool use. The certificate is offered by the Department of Electrical Engineering and Computer Science.

University of Central Florida: The Artificial Intelligence, Big Data, and Human Impacts certificate (12 hours) is offered by the Department of Writing and Rhetoric and so is an example of a non-STEM certificate. An ethics course and an AI literacy course are required. There is some overlap between this certificate and the one proposed here, but the Central Florida certificate is more focused on courses relevant to writing, rhetoric, and digital humanities, rather than Philosophy, Psychology, and Linguistics, fields which have an intimate connection to the development of Artificial Intelligence.

Wilmington University: The Artificial Intelligence Certificate (18 hours) requires six courses with no electives. An ethics course is required. All but one of the courses is offered under the prefix for Computer Science.

b. If program accreditation is available, provide an analysis of the ability of the program to satisfy the curricular standards of such specialized accreditation.

There are no accreditation bodies for AI programs.

6. Student Learning Outcomes

Describe the proposed learning outcomes for the certificate program.

Program Learning Outcomes.

Upon completing the certificate, the student will be able to do the following:

1. **Understanding AI Fundamentals:**
   - **PO-1:** Identify and explain the basic concepts and principles of artificial intelligence.
   - **PO-2:** Explain the ethical issues and societal impacts created by AI technologies.
2. **Application and Evaluation:**
   - **PO-3:** Analyze a problem, evaluating the suitability of different AI technologies.
   - **PO-4:** Apply AI-related concepts, technologies, and formal methods to solve problems within their field of work or study.
   - **PO-5:** Evaluate the performance and quality of AI-based solutions.
3. **Communication:**
   - **PO-6:** Effectively communicate AI concepts and findings, including potential ethical considerations.

In addition, upon completion of the certificate:

4. **Area of Specialization**
   - **PO-7:** Students will have developed more specialized knowledge in disciplines foundational to AI: psychology, philosophy, and linguistics.

Course Learning Outcomes

The relationship between course-level learning outcomes and program-level outcomes are shown below for the central non-elective courses comprising the degree. The electives satisfy PO-7.

ARTI 2130

Students who are successful in this course will:

1. Describe basic approaches to machine learning.
2. identify issues of bias that affect artificial intelligence.
3. practice creative approaches to problem-solving to prepare them for meeting future challenges with artificial intelligence and technology.
4. create and evaluate arguments about the promises and effects of artificial intelligence.

		Program Outcomes					
		PO-1	**PO-2**	**PO-3**	**PO-4**	**PO-5**	**PO-6**
Course Learning Outcome	**1**	•					•
	2	•	•				
	3		•		•		
	4		•			•	•

ARTI 4340

Students who are successful in this course will:

1. Explain ethical positions and problems related to artificial intelligence.
2. Explain aspects of artificial intelligence in relation to its effects on individuals and society.
3. Take and defend ethical positions on AI topics.

		Program Outcomes					
		PO-1	**PO-2**	**PO-3**	**PO-4**	**PO-5**	**PO-6**
Course Learning Outcome	**1**		•				•
	2		•				•
	3		•				•

CSCI 4550

This course presents a survey of topics in artificial intelligence. At the end of the semester, all students will be able to do the following:

1. Represent the environments of decision-making problems including their observability, determinism, continuousness, and other criteria.
2. Identify and compare agent types, such as reflex, goal-based, and utility-based.
3. Implement uninformed search strategies such as BFS, DFS, depth-limited search, and bidirectional search.
4. Implement heuristics in informed search strategies, as well as identify the aspects of a good heuristic.
5. Evaluate the effectiveness of local search algorithms, including hill climbing, simulated annealing, and beam searches.
6. Evaluate competitive game outcomes by using minimax algorithms, alpha-beta pruning, and evaluation functions.

7. Utilize basic inferencing rules in propositional logic, such as resolution and forward/backward chaining.
8. Express propositional statements using quantifiers and functions in First-Order logic.
9. Implement Java or written algorithms that evaluate goal-oriented problems using propositional or first-order propositional logic.
10. Represent knowledge using constructs such as Ontologies.

		Program Outcomes					
		PO-1	**PO-2**	**PO-3**	**PO-4**	**PO-5**	**PO-6**
Course Learning Outcomes	**1**	•			•		
	2	•		•	•	•	
	3				•	•	
	4				•		
	5			•	•	•	
	6			•	•	•	
	7				•		
	8	•			•		
	9				•		
	10				•		

ARTI 4555/6555

The Student Learning Outcomes are as follows:

1. Students will be able to explain fundamental concepts and approaches of Machine Learning.
2. Students will be able to analyze a problem, evaluating the suitability of different machine learning techniques.
3. Students will be able to use data and software tools and develop machine learning models to solve a problem.

		Program Outcomes					
		PO-1	**PO-2**	**PO-3**	**PO-4**	**PO-5**	**PO-6**
Course Learning Outcome	**1**	•					•
	2			•			
	3				•		

PHIL(LING) 4510/6510

Students are expected to be able to do the following:

1. Construct semantic proofs, including proofs by mathematical induction, deploying the concepts of truth-functional logic;
2. Construct derivations in a natural deduction system for truth-functional logic and construct proofs of proof-theoretic results for such systems;
3. Symbolize complex sentences of English using predicate logic with identity;
4. Construct proofs of basic semantic metatheorems for models of predicate logic with identity;
5. Construct derivations in a natural deduction system for predicate logic with identity and construct proofs of proof-theoretic results for such systems;
6. Construct proofs of basic results for the advanced topic chosen by the instructor.

		Program Outcomes					
		PO-1	**PO-2**	**PO-3**	**PO-4**	**PO-5**	**PO-6**
Course Learning Outcome	**1**				•		
	2				•		
	3				•		
	4				•		
	5				•		
	6				•		

7. Assessment and Admissions

Describe how the learning outcomes for the program will be assessed. Describe the process and criteria for how students will be admitted to and retained in the program.

Admission to the certificate will not be restricted, but it is anticipated that it will be most popular among students in the departments providing classes in the certificate (Linguistics, Philosophy, Psychology, and Cognitive Science). Message boards will be used to engage students enrolled in the program, and certificate students will be encouraged to attend informational, research, and social events hosted by the Institute (typically multiple events each year). Student progress through the certificate will be monitored using data available through DegreeWorks and other student information systems.

Assessment of the Program Learning Outcomes will be performed using tests, reports, papers, and other graded assignments in each of the courses comprising the certificate. Each course has specific learning outcomes. The foundational courses ensure that program learning outcomes 1-6 are covered, while completion of the two electives ensures that learning outcome 7 is achieved.

Review of the certificate and students' progression through the certificate will occur annually through the use of a survey open to all students enrolled in the certificate. An exit survey will be taken by the graduating students for feedback on the certificate. It will also form part of the Institute's regular 7-year unit review.

Documentation of Approval and Notification

Proposal: Undergraduate Certificate in Artificial Intelligence – Language, Minds, and Machines

College: Franklin College of Arts and Sciences

Department: Institute for Artificial Intelligence

Proposed Effective Term: Fall 2026

School/College:

- Executive Director of the Institute for Artificial Intelligence, Dr. Prashant Doshi, 9/10/2025
- Franklin College of Arts and Sciences Associate Dean, Dr. Paula Lemons, 12/16/2025