APPROVAL FORM FOR

DEGREE PROGRAMS

MISSISSIPPI STATE UNIVERSITY

NOTE: This form is a cover sheet that must accompany the degree program change proposal. The actual proposal should be prepared in accordance with format requirements provided in the *Guide and Format for Curriculum Proposals* published by the UCCC. Both cover sheet and proposal should be submitted to UCCC Mail Stop 9702 (281 Garner Hall), Phone: 325-9410.

College Bagley College of Engineering **Department:** Computer Science and Engineering

Contact Person: Andy perkins **Mail Stop:** 9637 **E-mail:** perkins@cse.msstate.edu

Nature of Change: New Program **Date Initiated:** 09/18/24

Current Degree (BS, MS, etc.): _____

Current Major: _____

Current Concentration(s): _____

Current Campus(es): ☐ **Starkville** ☐ **Meridian** ☐ **Distance** ☐ **Gulf Coast***

*Gulf Coast campus for Bagley College of Engineering only

New Degree (BS, MS, etc.): Undergraduate minor

Effective Date:

Semester	Year
Fall	2025

**Any new program or modification desiring a starting semester other than fall must include a justification

Proposed Major: Artificial Intelligence

Proposed Concentration(s): _____

Proposed Campus(es)

- ☑ Starkville
- ☐ Meridian
- ☐ Distance
- ☐ Gulf Coast*

*Gulf Coast campus for Bagley College of Engineering only

Summary of Proposed Changes:

The Department of Computer Science and Engineering already offers a BS in Artificial Intelligence and proposes here to add an undergraduate minor in AI.

Approved:	Date:
Department Head	10/23/2024
Director of Academic Quality	10/24/24
Chair, College or School Curriculum Committee	Dr. T.J. Jankun-Kelly 2024.11.04 08:33:51 -06'00'
Dean of College or School	22 NOV 2024
Chair, University Committee on Courses and Curricula	
Chair, Graduate Council (if applicable)	
Chair, Deans Council	

Template for NEW PROGRAMS (see Guide and Format, pp 31-34 for further information)

1. Catalog Description and Curriculum Outline-insert the template here:

PROPOSED New Degree	
Degree: Undergraduate Minor Major: Artificial Intelligence Concentration: N/A Endorsement: N/A	
Catalog Description: The undergraduate minor in Artificial Intelligence prepares students to understand and apply common artificial intelligence and machine learning methods in a variety of disciplines. Those completing the minor will be able to choose appropriate methods, explain how various AI/ML methods operate, implement AI-based solutions, apply existing methods to problems in science and engineering, and discuss ethical and regulatory considerations. This minor is not available to students matriculating in BS programs in Computer Science, Software Engineering, Cybersecurity, or Artificial Intelligence.	
Proposed Curriculum Outline	Required Hours
CSE 1284 Introduction to Computer Programming	4
CSE 1384 Intermediate Computer Programming	4
CSE 2263 AI Literacy	3
CSE 3683 AI Fundamentals	3
ST 2113 Introduction to Statistics (or equivalent)	3
Total Hours	17

2. Justification for the New Degree Program including how it meets the mission of the university.

The ability to use artificial intelligence (AI) techniques has become an important skills in a variety of careers. This minor will allow students across campus to learn the fundamentals of AI and how to apply AI techniques in their discipline.

3. How do these changes meet the changing needs of the degree program/industry or make our program more competitive.

   Over the past decade, computing has become pervasive, spreading to almost all business and industry. Recent advances in technology have enabled the use of artificial intelligence methods in these industries. It is key that the workforce have a solid understanding of these methods and how they can be used across a variety of disciplines.

4. Describe the coherence and increasing rigor of the program.

   a. Undergraduate Programs: Provide evidence that 3000-level and 4000-level courses are designed to provide a coherent program of study that enhances the degree.
   b. Graduate Programs: Provide evidence that the design of the program is not just a collection of graduate courses.

   Students will develop foundational computer programming skills in the 1000-level CSE 1284 Introduction to Computer Programming and CSE 1384 Intermediate Computer Programming courses. The 2000-level courses provide a background in the fundamentals of AI (AI Literacy) and statistics (Introduction to Statistics) needed to understand and use AI methods. For example, the AI Literacy course introduces students to basic AI principles, ethical and regulatory considerations, and applications of AI in a variety of fields. The 3000-level AI Fundamentals course is a more advanced AI course that builds upon AI Literacy by addressing the technical aspects of solving problems with AI and the basics of machine learning.

5. Student Learning Outcomes

   Outcome 1: Students will apply AI and statistical methods to solve real-world problems in a variety of domains.

Outcome 2: Students will assess AI approaches to determine which is most appropriate for a particular application.

Outcome 3: Students will implement basic AI methods.

6. Assessment Procedures

Learning Outcome	Assessment description & Course
Students will apply AI and statistical methods to solve real-world problems in a variety of domains.	Students will complete a semester project in CSE 2263 AI Literacy in which methods discussed in the class are applied to data provided by the instructor.
Students will assess AI approaches to determine which is most appropriate for a particular application.	Students will complete a selection of exam questions in CSE 3683 AI Fundamentals in which they will identify appropriate methods for a variety of applications.
Students will implement basic AI methods.	Students will use skills learned in CSE 1284 and CSE 1384 to write basic code to implement AI methods as part of a homework assignment in CSE 3683 AI Fundamentals.

7. Proposed 4-letter Abbreviation

BSAI

8. CIP Number (contact Director of Academic Quality for help in determining number)

11.0102

9. Attach Letters of Support

See attached letter from Department of Computer Science and Engineering Curriculum Committee.

MISSISSIPPI STATE UNIVERSITY
JAMES WORTH
BAGLEY
COLLEGE OF ENGINEERING

Stephen A. Torri
CSE Committee on Courses and Curricula
Computer Science and Engineering
Mississippi State University
665 George Perry Street
Box 9637
Mississippi State, MS 39762

October 8, 2024

Dr. Perkins,

To Whom It May Concern,

The Computer Science and Engineering (CSE) Faculty has recommended the following updates to the course descriptions to align with current instructional practices.

- Addition of AI minor
- Addition of CSE 2633 AI Literacy as a required course for AI minor
- Addition of CSE 4903 Professional Experience in Computing
- Modification of the following degrees to require the CSE 4903 Professional Experience in Computing course and add Calculus IV as a technical elective:
  - BS in Computer Science
  - BS in Software Engineering
  - BS in Cybersecurity
  - BS in Artificial Intelligence.
- Change of the prerequisite for CSE 3683 AI Fundamentals
- Change of the prerequisite for CSE 3623 AI Capstone II

Thank you for your attention to this matter.

Stephen Torri
Digitally signed by: Stephen Torri
Reason: I am approving this document
Email: storri@cse.msstate.edu
Date: 10.16.2024

Stephen A. Torri
Committee Member
Associate Professor

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