

CSIT 295: ARTIFICIAL INTELLIGENCE CAPSTONE

1. Course Information

Subject

CSIT - Computer Science/ Information Technology

Course Number

295

School

Science, Technology, Engineering, Mathematics

Course Title

Artificial Intelligence Capstone

2. Hours

Semester Hours

3

Lecture

3

Lab

0

Practicum

0

3. Catalog Description

For display in the online catalog

This course will provide the student, working with a faculty member and potential industry partner, the opportunity to design, implement, and deploy an Artificial Intelligence based application using the AI Project cycle. The student will use their knowledge of AI to document the project, develop the projects goals, design the application, produce a schedule, build the application, and provide the evaluation criteria for an assessment of how well the application met the stated goals. The student will use the various domains of AI such as natural language processing, computer vision, and machine learning to design and implement the application. The student will prepare a presentation summarizing their application and demonstrate how effective it was in meeting the stated goals to the faculty member.

4. Requisites

Prerequisites

CSIT 291 and CSIT 292

5. Course Type

Course Type for Perkins Reporting

vocational (approved for Perkins funding)

6. Justification

Describe the need for this course

This is an optional course for Computer Science, Associate in Applied Science with Artificial Intelligence Concentration. Students will design, implement, and deploy an Artificial Intelligence application with a faculty member and potentially an industry partner. Students will use and apply the knowledge they learned via the AAS in CS/Artificial Intelligence program to evaluate the application and present the detailed results to the faculty member.

7. General Education

Will the college submit this course to the statewide General Education Coordinating Committee for approval as a course, which satisfies a general education requirement?

No

If the course does not satisfy a general education requirement, which of the following does it satisfy:

Elective

8. Consistency with the Vision and Mission Statements, the Academic Master Plan, and the strategic initiatives of the College

Please describe how this course is consistent with Ocean County College's current Vision Statement, Mission Statement, Academic Master Plan, and the strategic initiatives of the College:

Add item	
1	Offer comprehensive educational programs that develop intentional learners of all ages and ensure the full assessment of student learning in these programs. (Mission Statement)
2	Foster educational innovation through effective teaching-learning strategies, designed to develop and nurture intentional learners who are informed and empowered. (Vision Statement)
3	Employ technology and learning outcomes assessment to ensure student success in an increasingly diverse and complex world. (Vision Statement)
4	Prepare students for entrance into the workforce and empower students through the mastery of intellectual and Practical Skills. (Academic Master Plan)
5	Challenge students to transfer information into knowledge and knowledge into action. (Academic Master Plan)

9. Related Courses at Other Institutions

Transferability of Course

If not transferable to any institution, explain:

This is an optional course for Computer Science, Associate in Applied Science with Artificial Intelligence Concentration. There is no known course for the schools listed here where transfer credit will be given.

10. Course Learning Outcomes

Learning Outcomes

Students who successfully complete this course will be able to:	
CLO1	Apply knowledge of the AI Project lifecycle to document AI projects, develop the AI project goals, put forth a design for the project and produce a detailed schedule.
CLO2	Develop detailed evaluation criteria to be used in the assessment of the AI application and for the data collection process.
CLO3	Build the AI application using the tools and techniques learned from AI courses and use the various domains of AI such as natural language processing, computer vision and machine learning to implement the application. Choose the appropriate AI model for the domain.
CLO4	Assess how well the AI application met the goals of the project as well as the schedule constraints.
CLO5	Summarize the AI project and prepare and present information to a faculty member and an industry partner.

11. Topical Outline

(include as many themes/skills as needed)

	Major Themes/ Skills	Assignments (Recommended but not limited to)	Assessments (Recommended but not limited to)	Course Learning Outcome(s)
T01	AI Capstone Project Definition a) Problem Statement and Scope b) Project goals c) Schedule d) High level Design e) Evaluation Criteria	Demonstrations Documentation Presentations	Demonstrations Documentation Presentations	CL01

T02	AI Application Data and Design a) Data collection, exploration, modeling b) Methodologies c) Design d) Review of Application with Faculty	Demonstrations Documentation Presentations	Demonstrations Documentation Presentations	CL01,CL02,CL03
T03	AI Application Development a) Equipment Requirements b) Application implementation c) Initial evaluation and assessment d) Tuning e) Review f) Deployment	Demonstrations Documentation Presentations	Demonstrations Documentation Presentations	CL01,CL02,CL03, CL04
T04	AI Application Assessment a) Preparation of Results b) Final Assessment of AI Application c) Presentation to Faculty	Demonstrations Documentation Presentations	Demonstrations Documentation Presentations	CLO4,CLO5

12. Methods of Instruction

In the structuring of this course, what major methods of instruction will be utilized?

- o Discussion
- o Demonstrations
- o Programs and online presentations

13. General Education Goals Addressed by this Course (this section is to fulfill state requirements)

Information

Technological Competency

Yes

Related Course Learning Outcome

CLO1-CLO5

Related Outline Component

T01-T04

Assessment of General Education Goal (Recommended but not limited to)

Demonstrations
Documentation
Presentations

Information Literacy

Yes

Related Course Learning Outcome

CLO1

Related Outline Component

T01

Assessment of General Education Goal (Recommended but not limited to)

Demonstrations

Documentation
Presentations

Independent/Critical Thinking

Yes

Related Course Learning Outcome

CLO1-CLO5

Related Outline Component

T01-T04

Assessment of General Education Goal (Recommended but not limited to)

Demonstrations
Documentation
Presentations

14. Needs

Instructional Materials (text etc.):

Appropriate textbooks and/or open educational resources will be selected. Contact the department for current adoptions. Class notes, presentations, software and online materials.

Technology Needs:

College Portal and/or College Distance Learning Platform and/or Textbook or Instructor Website.

Human Resource Needs (Presently Employed vs. New Faculty):

Presently employed.

Facility Needs:

Laboratory classrooms equipped with computer workstations, each configured to support AI applications. Podium computer similarly equipped plus the ability to present audio-video presentations to the class.

Library needs:

NA

15. Grade Determinants

The final grade in the course will be the cumulative grade based on the following letter grades or their numerical equivalents for the course assignments and examinations

A: Excellent

B+: Very Good

B: Good

C+: Above Average

C: Average

D: Below Average

F: Failure

I: Incomplete

R: Audit

For more detailed information on the Ocean County College grading system, please see Policy #5154.

16. Board Approval

History of Board approval dates

New course board approved: August 26, 2021