Artificial Intelligence (AI) in the World

Instructor:
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Office Hours: Thursdays &
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Course Title: AI in the World

Course Meets:
B-Days

Office Location:
Q506

Course Information

Welcome to AI in the World: This course introduces students to the principles of Artificial Intelligence (AI). The course defines "Intelligent Behavior", describes the relationship between AI and computer science, explains the history of AI and showcases applications of AI in the real world. Students will explore the role of data in AI applications and the algorithms which guide AI decision making. Students will learn about the role of perception in AI and how AI agents use information in decision making. Students will engage in hands-on activities related to use of AI in machine learning. This course also covers ethics in AI applications.

Course Grade

- Year-round half-credit course. 1st course in the AI Foundations CTE Framework.

Standards
After successfully completing this course, students will be able to perform the following:

1. Identify and define intelligent behavior.
2. Articulate the relationship between AI, machine learning, and computer science.
3. Explain the history and evolution of AI
4. Define and investigate examples of AI applications.
5. Identify examples of computer perception systems built into AI-enabled technologies.
6. Describe different types of data and how they are used in AI.
7. Describe the high-level processes, methods and conventions used in computer perception.
8. Identify and describe the types of representations and algorithms designed into AI-enabled technologies.

9. Explain how agents maintain representations of the world and use them for reasoning.
10. Describe machine learning and neural networks in AI-enabled technologies.
11. Describe the different methods computers use to learn from data (machine learning).
12. Collect and analyze a data set.
13. Conduct an investigation of a machine learning model.
14. Characterize major elements of intelligent behavior.
15. Explain how domain knowledge is used in the design of AI systems.
16. Articulate the many types of knowledge needed by AI agents to interact naturally with humans and the current limitations of AI to interact naturally with humans.
17. Understand and articulate how AI can impact society in both positive and negative ways.
18. Explain the best practices and key characteristics of bias, fairness, transparency, explainability, accountability of ethically designed AI systems and decision-making practices.
19. Identify deep fakes and explain critical information processing.

Course Schedule

- **Unit 1: Foundations of AI**
    - This unit introduces students to the essential concepts of intelligence — both human and artificial — and establishes a historical and conceptual grounding in AI. Students explore how AI fits within computer science and machine learning, while analyzing real-world examples of AI in action.
        - Students will also participate in an AI Design Contest hosted by UF College of Engineering & Duke Energy
- **Unit 2: How AI Works**
    - Students dive into the mechanics of how AI works. This includes computer perception (e.g., vision, speech), data-driven decision-making, machine learning fundamentals, and intelligent agents. Emphasis is placed on demystifying algorithms and understanding how machines "see," "learn," and "think."
- **Unit 3: Building and Testing AI Systems**
    - Students take a more active role in working with AI. They'll engage with datasets, use beginner-friendly tools to experiment with training models, and evaluate results. This unit promotes computational thinking, data literacy, and a deeper understanding of how AI learns and generalizes.

Course Materials and Tools

- Notebook for journaling/notes (spiral notebook or composition)
- MUST HAVE OWN CHROMEBOOK EVERYDAY (with charger!)
- Wired headphones/earbuds (no wireless)
- Fundamentals of Artificial Intelligence Textbook

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Grading

P.K. Yonge's Grading and Credit system is based on our shared beliefs about the purpose of assessment:

- Students should have a clear understanding and shared ownership of learning goals
- Grades should communicate what students know and are able to do both within and across disciplines
- Students should have multiple opportunities to practice, receive feedback, and demonstrate their knowledge and skills
- It is critical for students to develop productive habits of work alongside content and skill development

Type	Examples	% of Grade
Habits of Work	Classroom activities checked for completion	5%
Formative	Chapter quizzes	20%
Summative	Projects and Unit Tests	75%

The chart below outlines the relationship between numerical grades, letter grades, mastery-language, and credit within our mastery-based system.

Mastery-Language	Range (4-point grade system)	Meets Standard Course Credit Earned
Mastery (A)	3.51 - 4.0	GPA Point 4
Proficient (B)	3.01 - 3.5	GPA Point 3
Approaching (C)	2.51 - 3	GPA Point 2
Beginning (D)	2.01 - 2.5	GPA Point 1

Not Meeting (F)	.01 - 2.0	No Course Credit
No Evidence	0	No Course Credit

Course Expectations: Code of Conduct

4 Rs: Respectful, Resilient, Responsible, Ready

Electronic Device Policy

Students must come to class every day with their charged Chromebook. During class, the Chromebook should be used only to participate in the class. Students should not have personal electronic devices out during class at any time for any purpose, unless instructed to do so.

9th-12th Grade

Students may possess a wireless communications device but may only use it outside of class time - or when a teacher gives explicit permission for instructional purposes. Devices must be stored in teacher-designated areas during instructional time.

PK will provide access to telephones for students who need to contact families during times when they are prohibited from using their personal device.

Academic Dishonesty

It is expected that the work you submit in this and all of your courses is your own original work, or if not, contains full acknowledgment of borrowed sources. Generative AI tools will be explored throughout the course.

Any academic dishonesty will result in the *failure of that assignment as the minimum consequence*; other consequences range from failure of the course to academic probation to dismissal from P.K. Yonge.

ALL instances of academic dishonesty will be reported to the student's counselor and P.K. Yonge Administration.