# CS 362 Artificial Intelligence and Machine Learning

**Spring 2026**

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## Instructor Information

**Instructor:** Dr. Jeff Lehman (Prof. Lehman or Dr. Lehman)

**Office**: Science Hall 182  (Dowden Science Hall, Room 182)

**Office Phone:** (260) 359-4209

**Text** (via Google Voice): (260) 200-3842

**Email:** jlehman@huntington.edu

**Office Hours** (Help and Questions):

I am available each week during the following office hours:

Monday, Wednesday, Friday: 10:00 am  – 11:00 am (Indiana Time)

Tuesday, Thursday: 2:00 pm – 3:00 pm (Indiana Time)

No appointment is needed! You are also welcome to stop by the office outside of scheduled office hours. If you stop by and I am unavailable, we can easily arrange a time that works for you.

To ensure I am available at a specific time, please use the Microsoft Bookings Page to schedule a meeting.

You may also email, text, or call anytime you have questions. I typically respond within 24 hours (usually much sooner).

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## Meeting Time & Location

**Tuesday and Thursday**
**12:00 noon –1:15 am**
**Science Hall 124**

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## Course Description

An overview of Artificial Intelligence (AI) with a focus on Machine Learning. Topics include knowledge representation, automated reasoning, natural language processing, image recognition, neural networks, evolutionary algorithms, ethical issues, and machine learning. Students will design and develop a machine learning application utilizing AI and Machine Learning algorithms. (3 credits - Spring Even Years) *Prerequisite: CS 111 (216 recommended)*

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## Textbook

There are no required textbooks for this course. Readings, including papers, websites, and online texts, will be assigned throughout the semester.

Students may find access to a commercial AI subscription (such as a large language model) helpful throughout the course.

A key resource for this course is the HarvardX: CS50's Introduction to Artificial Intelligence with Python course.

While not required for this course, students considering graduate study should consider purchasing *Artificial Intelligence: A Modern Approach* by Stuart Russell and Peter Norvig (4th edition) which is considered a definitive text in the field of AI.

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## Grading

Each course component is worth a specific number of points. The percentage of total points determines the final grade. The instructor reserves the right to adjust assignments and points while maintaining overall percentage weightings.

| Component | Points | Percent |
|---|---|---|
| Course Engagement | 100 | 10% |
| Problem Sets (x10) | 600 | 60% |
| Ethics Paper | 100 | 10% |
| Group Project | 200 | 20% |
| **Total** | **1000** | **100%** |

### Grading Scale

- **A:** 93.0+
- **A-:** 90.0–92.9
- **B+:** 88.0–89.9
- **B:** 83.0–87.9
- **B-:** 80.0–82.9
- **C+:** 78.0–79.9
- **C:** 73.0–77.9
- **C-:** 70.0–72.9
- **D+:** 68.0–69.9
- **D:** 63.0–67.9
- **D-:** 60.0–62.9
- **F:** 0–59.9

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## Course Engagement (10%)

Active Course Engagement is vital for success in this course. Weekly readings and in-class exercises present the course material and provide the background needed to complete problem sets and prepare for final projects. Students are encouraged to take notes that summarize the topics covered in class and while working through problem sets. Throughout the semester, students will be asked to complete assigned readings and short exercises as part of the Course Engagement grade. These activities are designed to help students prepare for class and actively engage with course material. These exercises may include brief written responses, short online submissions, or in-class activities. In some cases, students may be asked to demonstrate engagement by answering questions, participating in discussions, or applying concepts during class. Completion and thoughtful participation, rather than perfection, are the primary expectations for these activities. Students are encouraged to ask questions during class sessions, utilize office hours, and send questions via email and text.

**Course Engagement grades** are recorded at midterm (50 points) and at the end of the course (50 points). Scores are based on attendance, in-class work, weekly assignments, communication with the instructor (such as asking questions or sharing insights), a participation self-reflection, and the instructor's observations. **Course Engagement is not a single assignment but a cumulative assessment of participation and engagement over time.**

### Attendance

Class sessions enable you to engage with the material, providing opportunities to ask questions, participate in discussions, and work through assignments with instructor support.

Attendance is recorded at the beginning of class. Students are expected to attend all class sessions, arrive on time, stay actively engaged, complete all in-class assignments, refrain from using phones/computers for non-course purposes, and remain in class for the entire session (except during breaks for emergencies). Late arrivals, early departures, and taking breaks during class may be treated as partial or full absences.

Huntington University policy requires students to attend at least two-thirds (2/3) of scheduled class sessions in a face-to-face course. **Students who miss one-third or more of class meetings will automatically fail the course.** This total includes excused absences for athletics, music, other university activities, or illness. Students are responsible for all material they miss.

If you arrive late or need to leave early, please do so quietly. Attending part of a session is better than missing entirely.

Do not attend class if you are sick. Your health and the health of others come first.

If you miss a class, please contact Prof. Lehman. Students who miss multiple sessions may be referred to Student Services, the Dean's Office, or the Registrar for support.

Virtual class sessions may be scheduled occasionally when the instructor has a course-related conflict. These sessions are considered regular class meetings, and attendance and participation are required.

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## Problem Sets (60%)

Weekly problem sets are assigned throughout the semester. These assignments are designed to help you apply and integrate the course concepts discussed in readings, online resources, and class sessions. The material covered will help students prepare for the final group project. Please ensure your work is neat, organized, and clearly labeled with your first and last name. Add your name to the program comments for all code submitted.

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## Ethics Paper (10%)

Students will write an ethics paper discussing an ethical issue (or issues) related to AI and Machine Learning. The paper must include how biblical principles and their personal faith apply to the topic. The paper must be 2500 words (or more) and include five (or more) references. Paper format must be APA or MLA format. A Grammarly performance report PDF must be submitted with a score of 90 (or higher). Papers will be submitted via Turnitin. Detailed project requirements, milestones, and due dates will be posted on Moodle.

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## Group Project (20%)

Students will complete a group project in which they research and introduce an artificial intelligence or machine learning topic that extends beyond the material covered in class. Working in small groups (2 or 3), students will become “experts” on their chosen topic and design a short instructional module intended to introduce the topic. Each group will develop instructional materials that include an overview of the topic, selected learning resources, and an original assignment or activity tailored to this course, along with a corresponding grading rubric. Groups will present their projects to the class during the final exam session. Detailed project requirements, milestones, and due dates will be posted on Moodle. Preliminary topics and groups must be selected by midterm.

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## Late Work Policy

Students should complete class assignments before the assigned due date and time. Unless otherwise noted, late work is accepted up to 48 hours late with a 10% penalty. Students should notify the instructor for cases of extreme hardship for which it may be possible to arrange alternate due dates. The instructor will post grades on Moodle. Please review the graded work and report any discrepancies. Students are encouraged to save returned assignments to document earned points.

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## Academic Honesty and Plagiarism

Integrity is essential. Plagiarism includes submitting work that is not your own, copying answers, failing to cite sources, using AI when prohibited, or treating individual assignments as group work.

Consequences may include a failing assignment grade, failure of the course, and referral to the Academic Dean.

Plagiarism is using another’s ideas, information, or wording without proper acknowledgment. All quoted, paraphrased, or summarized material must be cited. Common knowledge is the only exception.

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## AI Statement

This course permits the use of AI tools to assist with learning and code development. AI tools include applications like ChatGPT, Google Gemini, Microsoft Copilot, Grammarly, and others. Students are encouraged to use these tools to understand concepts, receive feedback on writing, debug code, check for plagiarism, generate practice problems, and enhance productivity. While AI can be beneficial, it is not a substitute for mastering the

material. Students must fully understand and be able to explain any code or answers they submit. Students must verify the accuracy of all AI-generated code and responses to ensure their reliability. AI solutions must adhere to assignment requirements to be accepted, and some assignments may require citations for AI assistance.

Assignments will include AI usage guidelines:
- **Red:** No AI use
- **Yellow:** Limited/cautious AI use
- **Green:** AI freely allowed

**AI tools are not allowed on exams.** Students who use AI in ways that contradict the instructional goals outlined in the course syllabus or rely on AI to complete assignments they are expected to do independently will be in violation of the Huntington University code of conduct. Such actions will be treated as cheating and/or plagiarism. Use these tools wisely and ethically.

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## Disability and Accessibility Policy

In compliance with Section 504 and the ADA, Huntington University provides reasonable accommodations.

Contact the **Academic Center for Excellence (ACE)**:
- Phone: 260-359-4290
- Email: ace@huntington.edu

Faculty will work with ACE to support eligible students.

## Weekly Schedule

The schedule may change slightly. Check the course website for updates.

| Week | T | R | Topics |
|---|---|---|---|
| 1 | 1/12 | 1/14 | What is AI, Ethical Issues |
| 2 | 1/19 | 1/21 | Turing, Search |
| 3 | 1/26 | 1/28 | |
| 4 | 2/2 | 2/4 | Knowledge |
| 5 | 2/9 | 2/11 | |
| 6 | 2/16 | 2/18 | Uncertainty |
| 7 | 2/23 | 2/25 | |
| 8 | **break** | **break** | |
| 9 | 3/9 | 3/11 | Optimization |
| 10 | 3/16 | 3/18 | Learning |
| 11 | 3/23 | 3/25 | Neural Networks |
| 12 | 3/30 | 4/1 | |
| 13 | 4/6 | 4/8 | Language |
| 14 | 4/13 | 4/15 | |
| 15 | 4/20 | 4/22 | Projects |
| 16 | **Thursday, April 30, 10:30 am** | | Final Project Presentations |

*Last modified: Monday, January 12, 2026*