



## KIIS Taiwan Program, Summer 2025

### CS 475 Topics: Artificial Intelligence and Machine Learning

**Instructor:** Dr. Jan Pearce

**Email:** pearcej@berea.edu

**Instructor's office hours:** on site and by appointment

*Syllabus subject to change*

### 1. Course Description: Artificial Intelligence and Machine Learning

This immersive travel abroad course invites students to delve into the dynamic landscape of Artificial Intelligence (AI) and Machine Learning (ML) in Taiwan by blending theory with hands-on practical applications. Students will develop a deeper understanding of the fundamental concepts and algorithms driving AI and ML by hands-on experiments with neural networks. In addition, students will learn about AI and ML research and industry that is unique to Taiwan by analyzing real-world Taiwanese projects that leverage AI and ML in diverse domains such as healthcare, finance, and smart cities.

All are welcome! No previous knowledge or experience in computer science is required.

### 2. Overall KIIS Program Student Learning Outcomes:

#### KIIS Study Abroad Mission Statement:

KIIS provides high-quality education abroad programs for students from all diverse backgrounds that promote deep international learning, are integrated into the curriculum, and encourage critical and creative thinking. Our goal is to help students understand the wider world and develop personal and professional skills for lifelong enrichment. We strive to go beyond generalizations and cultural stereotypes to help foster a nuanced appreciation of the world in which we live.

#### Students participating on KIIS study abroad programs aim to:

- 1) Understand contemporary issues of their host country/countries (i.e., KIIS program location).
- 2) Develop skills to interact comfortably in a global setting.
- 3) Understand other cultures.

Prior to your KIIS study abroad program, and again at the conclusion of your program, KIIS will ask each student to a) answer a few multiple-choice questions, and b) write a short reflective essay (two paragraphs in length) related to the elements detailed above. There is no right or wrong answer, and your responses will not affect your grade in any way. The purpose of the exercise is to help KIIS measure the effectiveness of its study abroad programs.

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### 3. Course Objectives and Specific Learning Outcomes:

Upon successful completion of this course, students will be able to:	How students will practice each outcome:	How student achievement of each outcome will be assessed:
1. Explain and discuss what AI is and is not, how AI methods solve problems, and the societal implications of AI.	Readings/Visits/Class discussions	Worksheets and short essays
2. Describe machine learning and classifiers including the concept of overfitting.	Readings/Class discussions	Worksheets and short essays
3. Articulate the concepts of neural networks and deep learning, including how data affects the results of machine learning.	Readings/Class discussions	Worksheets and short essays
4. Synthesize the information you learned to formulate a final presentation and final report on an approved subtopic in AI and/or ML.	Readings/Class discussions	Short essays/Independent research & presentation

### 4. Major Topics covered in the Course:

- What generative AI is, including related core AI concepts
- How AI works, and how a generative AI project is planned
- What AI is and is not capable of; and ways to create efficient prompts
- Advantages and disadvantages that AI technology brings to individuals, businesses, and society
- How machine learning and deep learning work, and how models are trained
- How data is used in these models, and how it affects the outcomes

### 5. Fulfillment of General Education Requirement:

This course is expected to meet the Active Learning Requirement (ALE) at Berea College and count in the entry-level exploratory category or the upper-level design category of the Computer and Information Science major.

### 6. Required Readings and Materials:

- **Primary Texts:** [Elements of AI](#). We will use two interactive books, **Introduction to AI** and **Building AI** published at this site. Both books contain excellent sections on machine learning as well as AI. Successful completion of either of these texts leads can lead to an optional free certification. The second book also offers three levels, beginning, intermediate, and advanced, where the certification is tied to the level.
- **Other online Materials:** We will also use many videos and shorter readings. You can access all course-related materials, including this syllabus, online.
- **Accounts:** Gmail and WhatsApp accounts will be used in the course. If you do not already have these, please create them--they are free.
- **Hardware:** A laptop computer with a physical keyboard is strongly recommended. A tablet or phone will be unlikely to suffice, particularly if you wish to pursue the intermediate or advanced levels of the second textbook.

**7. Graded Assignments:** Grades for the course will be calculated based on your work on the following items:

- **Participation (20%)** – You are expected to attend every class and to participate in out-of-class activities as directed by the instructor and the program director. KISS requires that any unexcused absence result in a grade reduction. Multiple unexcused absences may result in expulsion from the program. You will be graded here not just on your attendance, but your attitude and active engagement with our guest speakers and tours (during excursions) and the class discussions and readings.
- **Course Activities/Homework (40%)** – For each class period and each excursion/speaker, you will complete a course activity or a short essay. I will assign a specific activity or essay topic for each session, but often these activities will ask you to relate the course readings or excursion to Taiwan. Typically, you will submit these by 8AM each day.
- **Independent Research/Final Presentation (40%)** Both AI and ML are massive topics. For your final project you propose a subtopic area for deeper research and/or implementation. You will then complete a five-page structured report, and present this research to the class during our last two class meetings. You will be expected to reference only reputable articles, videos, and blog posts as your source materials.

All course assignments must be completed to receive a passing grade. There will be no extra credit offered. Your course will use the following scale:

A = 90-100%   B = 80-89%   C = 70-79%   D = 60-69%   F ≤ 59%

## 8. AI Policy:

**Generative AI is permitted and even encouraged in ways that support learning and thinking, with proper attribution, but is prohibited in other ways that short-circuit learning.**

Students are allowed, encouraged, and even required to use Generative AI in some ways but are prohibited from using it in other ways. Keep in mind that any content produced by generative AI can produce false information (called “hallucination,” but students remain responsible for ensuring the accuracy of any and all AI-generated content. In-text citations and references should all use the APA style. For more information and an example on correctly citing AI, please see <https://apastyle.apa.org/blog/how-to-cite-chatgpt>.

**Students are permitted and encouraged to use generative AI in the following ways:**

- **Brainstorming:** You may use generative AI to stimulate creativity, generate ideas, or brainstorm topics for papers, presentations, and discussions. The generated content must serve as a steppingstone, but never as a final product.
- **Citation Assistance:** AI tools can be used to manage, format, and organize citations and references, promoting adherence to academic writing standards and specific style guides required for individual assignments.
- **Grammar and Style Checking:** AI-powered writing enhancement tools may be used to help with spelling, grammar, syntax, and stylistic errors.
- **Concept Understanding:** Generative AI can be used to explain or simulate concepts taught in class, aiding in a deeper understanding.
- **Research Assistance:** AI can be used to conduct initial research, compile data, and summarize articles, books, or papers. It should never replace traditional research methods but rather help initiate and enhance them.

**You may not use generative AI in coursework in the following ways:**

- **Plagiarism:** Using AI-generated content as your original work without attribution. This includes any portion of any essay, paper, presentation, or exam answer.
- **Data Manipulation:** Using any AI tool to alter data or create misleading information.
- **Misrepresentation of Skills:** Using generative AI to complete tasks that are meant to assess your knowledge and/or skill.
- **Confidentiality Breach:** Using AI tools that might violate KIIS/university policies or laws related to data privacy and confidentiality.

**Metacognitive Reflection.** In addition to a proper citation, the student should include the following statement with any assignment where generative AI is used for assistance. *"I used generative AI [INSERT NAME OF PLATFORM, e.g. CHAT GPT] for assistance in the following ways on this assignment: [INSERT WAYS USED, e.g. brainstorming, citation assistance, grammar and style checking, concept understanding, and research assistance, etc]."*

## 9. Attendance Policy:

KIIS program participants are expected to be punctual to and in attendance at all classes, presentations, meetings and required excursions, and to remain with the program for the full academic period. Unexcused absences from classes and/or mandatory meetings will result in a lowering of the student's final grade, as will excessive tardiness. Multiple unexcused absences could result in expulsion from the program. Any absence from an academic class session must be excused for medical reasons.

## 10. Disability Accommodation:

KIIS will make every reasonable effort to provide accommodations for program participants with special needs or disabilities, but we cannot guarantee that we will be able to do so. Be aware that many foreign countries do not have comprehensive legislation comparable to the Americans with Disabilities Act (ADA). As a result, businesses and other establishments operating in foreign countries may not be able to provide accommodations.

If you have a disability accommodation need, we recommend you contact your KIIS Campus Representative, <https://www.kiis.org/about-kiis/contact-us/campus-representatives/> early in your program selection process so that s/he has time to discuss any specific needs,

including which KIIS programs may be best suited. You also are welcome to contact KIIS Assistant Director, Maria Canning, [maria.canning@wku.edu](mailto:maria.canning@wku.edu), to discuss your disability accommodation needs (e.g. housing, transportation, excursions, class schedule, etc.).

Immediately after acceptance, notify KIIS Admissions and Enrollment Specialist, Haley McTaggart, [haley.mctaggart@wku.edu](mailto:haley.mctaggart@wku.edu), if you have a special need or disability that might require any form of accommodation abroad. Failure to notify KIIS may prevent you from participating on your KIIS program.

If you require any accommodations abroad, you must provide KIIS Admissions and Enrollment Specialist, Haley McTaggart, an accommodation letter from your home campus' disability accommodation office that lists the accommodations you are eligible to receive. Please do not request accommodations directly from your KIIS Program Director or other KIIS Faculty; the KIIS Office will notify your KIIS Program Director and/or Faculty after we have received your above accommodation letter.

In some cases, you may need to make arrangements for a caregiver to join you on your KIIS program, should your physician, campus disability accommodation office, or KIIS make such a recommendation or require it.

### **11. Title IX / Discrimination & Harassment:**

Recent attention to gender discrimination and sexual harassment at colleges and universities reminds us of the importance of adhering to standards of ethical and professional behavior. KIIS Study Abroad is committed to supporting and encouraging safe and equitable educational environments for our students, faculty, and program directors. Students, faculty, and program directors are required to be civil and treat each other with dignity and respect. As such, harassment and/or discrimination of any kind will not be permitted or tolerated.

Sexual misconduct (sexual harassment, sexual assault, and sexual/dating/domestic violence) and sex discrimination are violations of KIIS policies. If you experience an incident of sex/gender-based discrimination, harassment and/or sexual misconduct, you are encouraged to report it to a) KIIS Assistant Director, Maria Canning (+1-859-200-1000) or KIIS Executive Director, John Dizgun (+1-270-227-2288), b) WKU's Title IX Coordinator, Ena Demir (270-745-6867 / [ena.demir@wku.edu](mailto:ena.demir@wku.edu)) or WKU's Title IX Investigator, Michael Crowe (270-745-5429 / [michael.crowe@wku.edu](mailto:michael.crowe@wku.edu)). Please note that while you may report an incident of sex/gender based discrimination, harassment and/or sexual misconduct to a KIIS program director and/or faculty member, KIIS program directors and faculty are considered "Responsible Employees" of Western Kentucky University and MUST report what you share to WKU's Title IX Coordinator or Title IX Investigator.

If you would like to speak with someone who may be able to afford you confidentiality, you may contact WKU's Counseling and Testing Center, <https://www.wku.edu/heretohelp/> at 270-745-3159.

For more information on KIIS Title IX, see <https://www.kiis.org/students/health-safety/title-ix-clery/>; additional Title IX resources can be found here <https://www.wku.edu/titleix/titleixbrochure2020.pdf>.

Everyone should be able to participate on a KIIS program, attend a KIIS event, or work in a KIIS environment (e.g. KIIS office) without fear of sexual harassment or discrimination of any

kind. Be respectful of each other.