CSCI 6751 V1 | Artificial Intelligence

2026/Winter | Tuesdays 6:30 pm – 9:30 pm

Vancouver Campus, Cambie Street, 138/139 Lecture

Instructor: Dr. Ali Safari Email: a.safarimamaghani@fdu.edu

Acknowledgment of traditional territory

FDU – Vancouver Campus acknowledges that the land on which we gather is the unceded territory of the Coast Salish peoples, including the territories of the xʷməθkwəy̓əm (Musqueam), Sḵwx̱wú7mesh (Squamish), Stó:lō and Səlílwətaʔ/Selilwitulh (Tsleil-Waututh) Nations.

COURSE CATALOGUE DESCRIPTION

This course provides an introduction to Artificial Intelligence, covering key topics such as machine learning, neural networks, natural language processing, reinforcement learning, generative AI, and AI ethics. The course emphasizes hands-on programming in Python.

COURSE OBJECTIVES

a. Course Outcomes:

- Understand core AI principles and problem-solving techniques.
- Develop machine learning (supervised and unsupervised) models
- Neural network models
- Explore natural language processing
- Explore reinforcement learning algorithms.
- Utilize generative AI technologies such as large language models.
- Complete hands-on assignments and a final project applying AI techniques

b. Student Outcomes Addressed:

- Apply AI concepts to real-world problems using Python.
- Develop skills in AI programming and model evaluation.

TEXTBOOK

Week 0 - Python References

- Sweigart, A. (2019). Automate the Boring Stuff with Python (2nd ed.). No Starch Press. https://automatetheboringstuff.com/
- Matthes, E. (2023). Python Crash Course (3rd ed.). No Starch Press. https://nostarch.com/python-crash-course-3rd-edition
- Downey, A. (2023). Think Python (2nd ed.). O'Reilly Media. https://greenteapress.com/wp/think-python-2e/
- Python Software Foundation. (2025). Python Tutorial. https://docs.python.org/3/tutorial/

AI References

Main Textbook

- Russell, S., & Norvig, P. (2024). ***Artificial intelligence: A modern approach*** **(4th ed., Global ed.)**. Pearson.

Supplementary References

- Supplementary research papers and online tutorials (can be provided during course)
- Bishop, C. M. (2023). *Deep Learning: Foundations and Concepts*. Springer.
- Géron, A. (2022). *Hands-on machine learning with Scikit-Learn, Keras, and TensorFlow* (3rd ed.). O'Reilly Media.
- Goodfellow, I., Bengio, Y., & Courville, A. (2016). *Deep learning*. MIT Press.
- Jurafsky, D., & Martin, J. H. (2023). *Speech and language processing* (3rd ed. draft). Draft available at https://web.stanford.edu/~jurafsky/slp3/
- Mitchell, T. M. (1997). *Machine learning*. McGraw-Hill.
- Sutton, R. S., & Barto, A. G. (2018). *Reinforcement learning: An introduction* (2nd ed.). MIT Press.
- OpenAI. (2025). *OpenAI API documentation*. https://platform.openai.com/docs/
- Hugging Face. (2025). *Transformers documentation*. https://huggingface.co/docs

Software/Tools:

- Python (Jupyter Notebook and Google Colab environment recommended)
- Libraries: scikit-fuzzy, scikit-learn, Keras, TensorFlow/ PyTorch, spaCy, OpenAI API

ATTENDANCE POLICY

Regular attendance and active participation are essential for keeping pace with the course material and engaging in classroom discussions and activities. Students are responsible for all material covered in class and must submit assignments on time, even if a class is missed.

Key Guidelines:

1. Students are expected to attend all classes. Absences should be communicated to the instructor **in advance.**
2. Missed classes without prior communication may result in a **loss of participation points**. Excessive absences may affect your grade or result in being dropped from the course.
3. Makeup quizzes or exams will only be allowed for valid reasons (e.g., illness, emergency) and **require proper documentation**. Whenever possible, inform the instructor before the class is missed.
4. Students are expected to actively engage in class activities and discussions, even if they occasionally miss a session.

Recommendation: Treat this policy as a commitment to stay on track and fully participate, as classroom interaction is vital for mastering the material and completing hands-on projects successfully.

EVALUATION/ASSESSMENT

Type of evaluation/assessment tool	**% of Overall Grade**
Quizzes and Participation	15%
Weekly assignments and labs	10%
Midterm exam	30%
Final project and presentation	15%
Final Exam	30%
TOTAL	**100%**

Grades and Grade Points

Grade	Percentage	GPA
A	90–100	4.00
A-	85-89.9	3.67
B+	80–84.9	3.33
B	75-79.9	3.00
B-	70-74.9	2.67
C+	65-69.9	2.33
C	60-64.9	2.00
F	0-59.9	0

CLASSROOM AND EMAIL ETIQUETTE

Classroom:

- Arrive on time and be prepared.
- Silence phones and personal devices.
- Participate actively and show respect to everyone.
- Eating and drinking in class is discouraged.

Email:

- Use clear subject lines and be concise.
- Maintain a professional tone.
- Respond in a timely manner when seeking assistance.

STUDENTS WITH DISABILITIES

Students with documented medical, psychological or learning disabilities, who feel they may need in-class academic adjustments, reasonable modifications, and/or auxiliary aids and services while taking this course, should first contact the Disability Support Services (DSS) to discuss their specific needs. At the Florham

Campus, including the School of Pharmacy & Health Sciences and study abroad programs, contact the Director of Disability Support Services at 973-443-8079. At the Metropolitan Campus, online and off-campus programs, contact the Director of Disability Support Services at 201-692-2076. At the **Vancouver Campus**, contact the Deputy Campus Executive at 604-648-4463. Once the academic adjustments, modifications, or auxiliary aids and services are approved by DSS, make an appointment to see the professor.

ACADEMIC INTEGRITY

Students are expected to maintain the highest standards of academic honesty. For FDU's complete Academic Integrity Policy, please see Academic Regulations at https://www.fdu.edu/wp-content/uploads/2020/01/academic-regulations.pdf or https://www.fdu.edu/academic-integrity/.

COURSE SCHEDULE: This is a tentative schedule (dates and topics are subject to change).

Week	Date	Topic
0	-	Python Primer (Self-study recommended)
1	Jan 13	Introduction to AI and Problem Solving
2	Jan 20	Introduction to Machine Learning
3	Jan 27	Supervised Learning Algorithms I
4	Feb 3	Supervised Learning Algorithms II
5	Feb 10	Generalization & Performance Evaluation Metrics
6	Feb 17	Unsupervised Learning & Clustering I
7	Feb 24	**Midterm Exam**
8	March 3	Unsupervised Learning & Clustering II
9	March 10	Neural Networks and Deep Learning I
10	March 17	Neural Networks and Deep Learning II
11	March 24	Natural Language Processing (NLP) I
12	March 31	Natural Language Processing II
13	Apr 7	Reinforcement Learning
14	Apr 14	Final Project / Presentation
15	Apr 21	**Final Exam (check exam timetable)**