

CS 640 Artificial Intelligence

Fall 2026 Syllabus

Official Course Description

Studies computer systems that exhibit intelligent behavior, in particular, perceptual and robotic systems. Topics include human computer interfaces, computer vision, robotics, game playing, pattern recognition, knowledge representation, planning.

Prerequisites

Formally, the undergraduate prerequisites are CS 330, and CS 132 or MA 242. Practically, basic algorithms, linear algebra, probability and calculus will be needed.

Weekly Cadence

- Tuesday
 - Lecture 11:00-12:15 @ CAS 224
- Wednesday
 - Homework due @ 11:59pm
- Thursday
 - Lecture 11:00-12:15 @ CAS 224
 - Homework released via Blackboard / Gradescope
- Friday
 - Discussion 9:05-9:55 (A2), 10:10-11:00 (A3), 11:15-12:05 (A4) @ CGS 421

Course Staff

- Instructor: Jeffrey Considine
 - Office: CDS 1645
 - Office hours: Monday 10-12, Tuesday 9:30-10:30, Wednesday 1-2
 - Email: jconsidi@bu.edu
- Teaching Fellow: Jongin Kim
 - Office: CDS 362A
 - Office hours: Thursday 2-4, Friday 3-5
 - Email: jongin@bu.edu

Schedule

This schedule is subject to change, particularly towards the end of the course.

Date	Lecture Topic
Thursday, September 3	Course Introduction and Evaluation
Tuesday, September 8	State-based search
Thursday, September 10	Constraint satisfaction
Tuesday, September 15	Rule-based systems
Thursday, September 17	Adversarial search
Tuesday, September 22	Exam 1
Thursday, September 24	Sequential decision making
Tuesday, September 29	Markov decision processes
Thursday, October 1	Optimizing finite Markov decision processes
Tuesday, October 6	Planning under uncertainty
Thursday, October 8	Model-free reinforcement learning
Tuesday, October 13	Substitute a Monday schedule of classes
Thursday, October 15	Policy gradients
Tuesday, October 20	Exam 2
Thursday, October 22	Hidden Markov models and latent variables
Tuesday, October 27	Neural networks
Thursday, October 29	Training neural networks
Tuesday, November 3	Recurrent neural networks and sequence modeling
Thursday, November 5	Convolutional neural networks
Tuesday, November 10	Generative models I
Thursday, November 12	Generative models II
Tuesday, November 17	Exam 3
Thursday, November 19	Grammars and parsing
Tuesday, November 24	Classical machine translation
Thursday, November 26	Thanksgiving Recess
Tuesday, December 1	Attention and transformers
Thursday, December 3	Large language models
Tuesday, December 8	Reasoning language models
Thursday, December 10	Neurosymbolic reasoning

Course Infrastructure

- [Blackboard](#) for course material including readings.
- [Piazza](#) for course announcements and questions.
- [Gradescope](#) for assignments and exams (entry code N/A). All regrade requests must be submitted through Gradescope within a week of grades being posted.
- [Echo360](#) for lecture recordings. These will primarily be best effort iPad screen recordings, but backup recordings will be made automatically if the room is equipped.

Textbooks and Reference Materials

- [Artificial Intelligence: Foundations of Computational Agents, 3rd Edition](#) by Poole and Macworth.
- [Reinforcement Learning: An Introduction](#) by Sutton and Barto.
- [Understanding Deep Learning](#) by Prince.
- [Speech and Language Processing](#) by Jurafsky and Martin.
- Many weeks will also have academic papers or other articles assigned as reading. These will be linked from Blackboard.

Course Assessment

Grades will be based on the following assessments and weights.

- Homework assignments: 20%
- 3 in-class exams: 60%*
- Final exam: 20%*

Late submissions will usually be allowed for up to four days but will be penalized 1% per hour based on last submission times recorded by Gradescope. This penalty will be applied separately from the raw scores that you see in Gradescope and Blackboard. See Gradescope for assignment-specific deadlines.

Assignment Extension and Makeup Exam Policies

Students are expected to track course deadlines and exam dates. Extensions and makeup exams are reserved for documented extraordinary circumstances, not for ordinary workload management, forgetting deadlines, or delayed reporting of past issues.

Requests

- Extension and makeup exam requests must be made as soon as the conflict is known. Except in emergencies, requests should be made before the relevant deadline or exam time.
- Illnesses and emergencies must be reported as soon as reasonably possible. Requests may be denied if the student did not contact the instructor at the time or as soon as they were able.
- Requests should identify the affected assignment or exam, explain the reason for the request, state when the issue began, and describe the specific arrangement being requested. Documentation may be required, especially for after-the-fact requests.

Reasons That Are Not Normally Grounds for Extensions or Makeup Exams

Forgetting a deadline, forgetting to submit, submitting the wrong assignment, misreading the syllabus, being busy with other courses, having multiple assignments due, work obligations, travel plans, technical problems, file upload errors, computer problems, waiting until the last minute to submit, or general end-of-semester workload are not normally grounds for an extension or makeup exam.

Previous extensions or makeup exams do not themselves justify additional extensions or later makeup exams. Students are expected to use any approved extension or makeup arrangement to get caught up.

Limits on Extensions and Makeup Exams

- Extensions and makeup exams will not be granted after solutions for that assignment are posted or after grades for that assessment are released.
- If you join the class after an assignment has been released, contact the instructor immediately to discuss arrangements. Events that occurred before you joined the class will not be considered reasons for extensions on assignments released after you joined the class.
- When makeup exams are allowed, they must normally be completed during the same week as the original exam. Scheduling is based on instructor availability and the student's scheduled classes. Students are expected to prioritize course obligations during normal university hours; non-course commitments may limit the available makeup options.
- If you do not respond promptly, usually within 24 hours, to scheduling messages about a makeup exam, you may lose the opportunity to take the makeup exam.

Exceptions and University Policies

All extensions and makeup exams are subject to instructor approval and must be consistent with course policy, university policy, and fairness to other students. Approved university

accommodations, religious observances, university-sanctioned activities, and other protected circumstances will be handled according to university procedures.

Student Code of Conduct

All students are expected to abide by University conduct policies as detailed in the following links.

- [Boston University Student Codes of Conduct](#)
- [College of Arts & Sciences Codes of Conduct](#)
- [Boston University Student Responsibilities](#)

Academic Honesty

You may discuss assignments with classmates and consult the Internet, but you must cite your collaborators and sources. To be clear, this includes all use of generative AI. If you are copying, paraphrasing, or adapting the words of someone or something else, you should cite them. For chat-based generative AI, an accessible link to the transcript suffices. However, under no circumstances are you allowed to copy, modify or submit files created by other students.

Regardless of the sourcing and citation, you are responsible for understanding the content that you submit. If you cannot explain your submission to the instructor's satisfaction, credit may be withdrawn at the discretion of the instructor independent of whether appropriate citations were provided.

Cheat sheets, collaboration and other sources will not be allowed during exams. To be clear, any access or interaction with the Internet or AI is forbidden during exams. Any case of academic dishonesty will result in a zero for the entire assignment or exam after following applicable University policies.

Accommodations for Students with Disabilities

From <https://www.bu.edu/disability/>,

Our goal at Disability & Access Services is to provide services and support to ensure that students are able to access and participate in the opportunities available at Boston University. In keeping with this objective, students are expected and encouraged to utilize the resources of Disability & Access Services to the degree they determine necessary. Although a significant degree of independence is expected of students, Disability & Access Services is available to assist should the need arise.

In addition to helping students receive accommodations, we also provide resources to the University community so that events and opportunities can be made accessible.

To make an appointment, please call 617-353-3658. For general inquiries feel free to email access@bu.edu. Please note, emails will be responded to within three business days.

Please reach about new accommodations at least a week beforehand to allow for scheduling and other preparation.