

CS 542 Principles of Machine Learning

Spring 2026 Syllabus

Official Course Description

Introduction to modern machine learning concepts, techniques, and algorithms. Topics include regression, kernels, support vector machines, feature selection, boosting, clustering, hidden Markov models, and Bayesian networks. Programming assignments emphasize taking theory into practice, through applications on real-world data sets.

Weekly Cadence

Weekly reading material and assignments will be posted in Blackboard.

- Lectures:
 - Monday/Wednesday 2:30-3:45 @ CAS 211
- Labs:
 - Friday 1:25-2:15 @ SCI 115
 - Friday 2:30-3:20 @ CAS 201
 - Friday 3:35-4:25 @ CAS B06B
- Instructor: Jeffrey Considine
 - Office: CDS 1645
 - Office hours: Monday 11-12, Wednesday 1-2 and 4-5, Thursday 1-2
 - Email: jconsidi@bu.edu
- Teaching Fellow: Zecheng Wang
 - Office hours: Will post location and hours in Piazza.
 - Email: vicwang0@bu.edu

Course Infrastructure

- Blackboard for course material including readings.
- Piazza for course announcements and questions.
- Gradescope for assignments and exams. Homework assignments must be submitted in Gradescope. Please do not email files to course staff. All regrade requests must be submitted through Gradescope within a week of publishing grades.
- “Pattern Recognition and Machine Learning” by Christopher M. Bishop will be the main textbook and is freely available as a [pdf from the author](#).

Schedule

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

Date	Lecture Topic	Deadlines
Wednesday, January 21	Introduction	
Monday, January 26	Preliminaries	
Wednesday, January 28	Supervised Learning I	HW 1 due
Monday, February 2	Supervised Learning II	
Wednesday, February 4	Supervised Learning III	
Monday, February 9	Supervised Learning IV	HW 2 due
Wednesday, February 11	In-class exam	
Tuesday, February 17	Bayesian Methods I	
Wednesday, February 18	Bayesian Methods II	
Monday, February 23	Support Vector Machines I	HW 3 due
Wednesday, February 25	Support Vector Machines II	
Monday, March 2	Support Vector Machines III	HW 4 due
Wednesday March 4	In-class exam	
Monday, March 16	Neural Networks I	
Wednesday, March 18	Neural Networks II	
Monday, March 23	Neural Networks III	HW 5 due
Wednesday, March 25	Practical Issues in Machine Learning	
Monday, March 30	Learning for Sequence Data	HW 6 due
Wednesday, April 1	In-class exam	
Monday, April 6	Ensembles	
Wednesday, April 8	Probabilistic Generative Models	
Monday, April 13	Unsupervised Learning I	HW 7 due
Wednesday, April 15	Unsupervised Learning II	
Wednesday, April 22	Reinforcement Learning I	HW 8 due
Monday, April 27	Reinforcement Learning II	
Wednesday, April 29	Reinforcement Learning III	HW 9 due

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 and Extensions

Late submissions will usually be allowed up to four days with a late penalty of 1% per hour based on last submission times recorded by Gradescope. The late penalty will be applied separately from the raw scores that you see in Gradescope and Blackboard. See Gradescope for assignment-specific deadlines. Assignments will not be accepted after your late submission period in Gradescope.

Extensions for extraordinary circumstances will be considered on a case-by-case basis and will be granted solely at the instructor's discretion. Generally, extension requests will be more likely to be granted before the original due date, and rarely granted after grades have been published. If you join the class after the semester begins, speak with the instructor for extensions on any assignments assigned before you joined the class. All extensions will be tracked using Gradescope. These extensions will change your deadlines in Gradescope, and it will be your responsibility to submit in Gradescope before the new deadline.

Exam Weights

If your percentage scored on the final exam is higher than that of your aggregated in-class exams, then your final exam weight will increase to 50% while your weight of the in-class exams will drop to 30%. This will be the only opportunity to make up for poor grades. There will be neither extra credit assignments nor retakes for exams.

Grading Curve

Letter grades will be assigned according to the following curve.

Letter Grade	Minimum Weighted Average
A	90%
A-	85%
B+	80%
B	75%
B-	70%
C+	67%
C	63%
C-	60%
D	50%

These thresholds will be applied without rounding.

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 explicitly.

Regardless of the sourcing and citation, you bear responsibility for your submissions. If you cannot explain your submission, credit may be withdrawn at the discretion of the instructor regardless of whether appropriate citations were provided.

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.