Syllabus
AI313 – Introduction To Machine Learning
2026 Spring

Course Description
Machine Learning (ML) concerns with computer programs that automatically solve problems using sample data and past experience. The primary focus of the course is to provide a broad introduction to ML algorithms and their applications to selected problems (e.g., music recommendation, face/speech/object recognition, text classification, etc.). The topics include supervised and unsupervised learning algorithms along with the learning theory.

Upon successful completion of this course, students learn basic ML algorithms and know how to apply them to specific problems.

Prerequisite: There are no formal prerequisites for this course. However, familiarity with basic concepts in Linear Algebra and Statistics, as well as programming skills (preferably in Python), is recommended.

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Schedule
Class Hours:
Mon 10:00–11:50 am
Tue 11:00 am–12:50 pm
Location: TBD
Office Hours: Monday 2:00–4:00 pm; by appointment/email

Grading
Midterm Exam: 25%

Final Exam: 35%

Term Project: 20%
(prop. 5%, prog. 30%, final 65%)
Quizzes: 20%

Textbook and Reference(s): There is no assigned text for this course. Class notes, chapters from the reference books and research papers should be used as the primary reference. The following books are recommended:

1. Tom Mitchell, "Machine Learning", McGraw-Hill, (1997). (*highly recommended*)
2. Ethem Alpaydin, "Introduction to Machine Learning, Third Edition", MIT Press, (2014)
3. Christopher Bishop, "Pattern Recognition and Machine Learning", Springer, (2006)
4. Richard O. Duda, "Pattern Classification", Wiley, (2000).

Table 1: Weekly Course Schedule

Week	Topics
1	Introduction to ML
2	Hypotheses and Version Spaces
3	Concept learning. Project proposal due (via OYS)
4	Decision tree learning (DTL)
5	Entropy, information gain, overfitting, continuous valued attributes
6	Evaluating ML methods
7	Artificial neural networks (ANNs). Progress report and Demo due (via OYS)
8	Midterm Exam – Subject to change according to Faculty regulations
9	Multilayer perceptron (MLP)
10	Instance based learning
11	Genetic algorithms (GAs)
12	Support vector machines (SVMs)
13	Final report and presentation due (via OYS) — **Term project presentation**
14	**Term project presentation**
15	No Class - Public Holiday
16	**Term project presentation**, Course summary & Review

Remarks
Projects: A course project in the field of Machine Learning will be conducted in groups of two students. The project topic is proposed by the students and must be approved by the instructor. Project activities consist of a project proposal, a progress report and demo, and a final report and in-class presentation. Failure to submit or present any required project activity will result in no project grade. Official excuses will be evaluated in accordance with University regulations and instructor discretion.

Late Submission Policy: No deadline extensions for project deliverables.

Attendance: A minimum of **70%** attendance of the lecture hours is compulsory. Failure to meet this requirement will result in an **F2** grade.

Moodle (OYS) page of the course: Check regularly the Moodle page of the course for lecture notes, homework assignments, and announcements.

The instructor reserves the right to modify this syllabus at any time without prior notice.