

STA414H1 S

Statistical Methods for Machine Learning II

Winter 2025 Syllabus

Course Meetings

STA414H1 S

Section	Day & Time	Delivery Mode & Location
LEC0101	Monday, 2:00 PM - 5:00 PM	In Person: FE 230

Refer to ACORN for the most up-to-date information about the location of the course meetings.

Course Contacts

Course Website: <https://erdogdu.github.io/sta414/>

Instructor: Murat Erdogdu

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Phone: 6505612828

Office Hours and Location: Mondays, 17-19 FE 230

Course Overview

Probabilistic foundations of supervised and unsupervised learning methods such as naive Bayes, mixture models, and logistic regression. Gradient-based fitting of composite models including neural nets. Exact inference, stochastic variational inference, and Marko chain Monte Carlo. Variational autoencoders and generative adversarial networks.

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Prerequisites: STA314H1/ CSC411H1/ CSC311H1/ (STA314H5, STA315H5)/ CSCC11H3/ CSC411H5; STA302H1/ STAC67H3/ STA302H5; CSC108H1/ CSC110Y1/ CSC120H1/ CSC148H1/ CSCA08H3/ CSCA48H3/ CSCA20H3/ CSC108H5/ CSC148H5; MAT235Y1/ MAT237Y1/ MAT257Y1/ (MATB41H3, MATB42H3)/ (MAT232H5, MAT236H5)/ (MAT233H5, MAT236H5); MAT223H1/ MAT224H1/ MAT240H1/ MATA22H3/ MATA23H3/ MAT223H5/ MAT240H5/ MATB24H3/ MAT224H5

Corequisites: None

Exclusions: CSC412H1, STAD68H3

Recommended Preparation: STA303H1

Credit Value: 0.5

Marking Scheme

Assessment	Percent	Details	Due Date
Midterm Exam	25%	In-class exam, 2 hours long.	2025-02-24
Assignment 4	9%		2025-03-30
Assignment 3	6%		2025-03-16
Assignment 2	10%		2025-02-16
Assignment 1	10%		2025-02-02
In-Person Final Exam	40%		Final Exam Period

Late Assessment Submissions Policy

If the midterm test is missed for a valid reason then the final test will be worth 65% of your final grade. Other reasons for missing a test will require prior approval by your instructor. If prior approval is not received for non-medical reasons then you will receive a term test grade of zero.

Policies & Statements

Late/Missed Assignments

Ten percent of the value will be deducted for each late day (up to 3 days, then submission is blocked). No credit will be given for assignments submitted after 3 days.

Late/Missed Assignments

This item is listed here to remind you to include your late/missed assignment policy; if you have late penalties, you are required to publish them in your syllabus. Please see the [A&S Academic Handbook \(https://www.artsci.utoronto.ca/faculty-staff/teaching/academic-handbook\)](https://www.artsci.utoronto.ca/faculty-staff/teaching/academic-handbook) sections on missed term work (Section 4.7), late term work and extensions (section 4.8), and missed term tests (Section 5.3) for more information.