

COM S 574: Introduction to Machine Learning
Course Information and Syllabus Document

Spring 2019
Kris De Brabanter

Contact information

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About this course

Lecture: M W F, 10am – 10:50am, Hort 0118
Course URL: <https://bb.its.iastate.edu/>
Prerequisites: COM S 311, COM S 230 or CPR E 310, STAT 330, MATH 165, ENGL 250, SP CM 212, COM S 342 or comparable programming experience
Textbook: Gareth James; Trevor Hastie; Robert Tibshirani & Daniela Witten, An Introduction to Statistical Learning: With Applications in R, Springer, 2013
Additional Reference: Trevor Hastie, Robert Tibshirani & Jerome Friedman, The Elements of Statistical Learning: Data Mining, Inference, and Prediction (7nd Ed.), Springer, 2009
Computing: R software will be used for this course.
Final Exam Calendar: <http://www.registrar.iastate.edu/students/exams/springexams>

The main difference with COM S 474 will be in the difficulty of the homeworks and exams.

Description: *Prereq: COM S 311, COM S 230 or CPR E 310, STAT 330, MATH 165, ENGL 250, SP CM 212, COM S 342 or comparable programming experience*
Basic principles, techniques, and applications of Machine Learning. Design, analysis, implementation, and applications of learning algorithms. Topics include: statistical learning, pattern classification, function approximation, Bayesian learning, linear models, artificial neural networks, support vector machines, decision trees, instance based learning, probabilistic graphical models, unsupervised learning, selected applications in automated knowledge acquisition, pattern recognition, and data mining.

Homework: Homework assignments will be posted on the Canvas course website. These assignments will be due at the start of Friday's lectures. Discussion with friends and classmates is strongly encouraged, yet the final assignment you submit must be your own. Copying solutions from others is not a good way to learn and will not be tolerated. No late homework will be accepted. Solutions will be posted on the blackboard course website soon after the due dates.

Examinations: 1 Midterm (TBA). The final exam will be on Tuesday May 7, 2019, 9:45-11:45 a.m at Hort 0118

Grading: Your grade for the course will be determined by the homework assignments (30%), midterm (30%), and the final exam (40%). Students are guaranteed to receive the letter grade based on the scales shown below. However, the instructor reserves the right to modify the grading scale so as to improve the letter grade if warranted by circumstances (e.g. unusual high level of difficulty of problem sets).

- 92% -100% A
- 89%-91% A-
- 85%-88% B+
- 80%-84% B
- 75%-79% B-
- 70%-74% C+
- 65%-69% C
- 60%-64% C-
- 55%-59% D+
- 50%-54% D
- 45%-49% D-
- < 45% F

Academic Dishonesty

The class will follow Iowa State University's policy on academic dishonesty. Anyone suspected of academic dishonesty will be reported to the Dean of Students Office.
<http://www.dso.iastate.edu/ja/academic/misconduct.html>

Disability Accommodation

Iowa State University complies with the Americans with Disabilities Act and Sect 504 of the Rehabilitation Act. If you have a disability and anticipate needing accommodations in this course, please contact (instructor name) to set up a meeting within the first two weeks of the semester or as soon as you become aware of your need. Before meeting with (instructor name), you will need to obtain a SAAR form with recommendations for accommodations from the [Disability Resources Office](#), located in Room 1076 on the main floor of the Student Services Building. Their telephone number is 515-294-7220 or email disabilityresources@iastate.edu . Retroactive requests for accommodations will not be honored.

Dead Week

This class follows the Iowa State University Dead Week policy as noted in section 10.6.4 of the Faculty Handbook <http://www.provost.iastate.edu/resources/faculty-handbook> .

Harassment and Discrimination

Iowa State University strives to maintain our campus as a place of work and study for faculty, staff, and students that is free of all forms of prohibited discrimination and harassment based upon race, ethnicity, sex (including sexual assault), pregnancy, color, religion, national origin, physical or mental disability, age, marital status, sexual orientation, gender identity, genetic information, or status as a U.S. veteran. Any student who has concerns about such behavior should contact his/her instructor, [Student Assistance](#) at 515-294-1020 or email dso-sas@iastate.edu, or the [Office of Equal Opportunity and Compliance](#) at 515-294-7612.

Religious Accommodation

If an academic or work requirement conflicts with your religious practices and/or observances, you may request reasonable accommodations. Your request must be in writing, and your instructor or supervisor will review the request. You or your instructor may also seek assistance from the [Dean of Students Office](#) or the [Office of Equal Opportunity and Compliance](#).

Contact Information

If you are experiencing, or have experienced, a problem with any of the above issues, email academicissues@iastate.edu.