



THE OHIO STATE UNIVERSITY
FISHER COLLEGE OF BUSINESS

AMIS 7640
Autumn 2023

Instructor
Nate Craig
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Meetings
JPMC
Thursdays
4:00–7:00 PM

Syllabus for AMIS 7640: Data Mining

Course Overview

Applying modern algorithms to large quantities of data transforms all business disciplines, creating opportunities for novel business models and new ways to compete. This course introduces data mining practices derived from modern algorithms in machine learning and artificial intelligence, alongside example applications. We will implement these techniques in Python using various data sources and types. Further, we will consider the role of data mining and artificial intelligence in organizations and societies. Participants in this course will learn to recognize and analyze opportunities for creating value with data mining.

Class Structure

Our meetings focus on active learning, including discussion and exercises. We are all learners, and we all contribute to the quality of the classroom experience. Therefore, you must review the relevant material in advance so you can benefit from class and add to our mutual learning. The course schedule, which describes the readings and assignments, is available on Carmen.

Materials

The course textbook is *Hands-On Machine Learning* by Aurélien Géron, third edition. The book is available from [Amazon](#) and other book-sellers. The digital or physical versions are both acceptable for course purposes.

The course requires a working environment supporting Python, Jupyter Lab or Notebook, and relevant Python packages. [Google Colab](#) pro-

vides a complete and ready option. Please see the introduction of the course textbook and the text's [supplementary materials](#) for further instructions on setting up an appropriate working environment.

I will post notes and example applications to the Carmen course site. Students seeking further explanations and practice will also find optional references to high-quality external materials on Carmen. Please do not hesitate to contact me to discuss such materials, even if we do not cover them in class.

Course Requirements and Grading

The course grade depends on four components: class participation, problem sets, a course project, and a final exam. Please note that the requirements of the course are identical for everyone. Making up for poor performance through extra credit work is not possible.

- In practice, the abilities to advance arguments and to describe your analyses' outcomes are critical. Class participation provides an opportunity to hone these skills. The class participation component reflects the quality of your contributions to in-class discussions and exercises. Reviewing assigned material before class will be critical to your ability to contribute to the discussion.
- There will be four problem sets.
- The project allows you to apply the course material to a context of interest.
- The final exam will test your ability to apply course concepts, mirroring the activities of the problem sets.

See Carmen for details of the problem sets, the course project, and all due dates.

The weights for each component of the course are as follows.

	Weight (%)
Class Participation	10
Problem Sets	40
Course Project	30
Final Exam	20

Grade Appeal Policy

Grades should reflect the overall quality of performance of the student. If you do not think your grade is correct, please submit a clear written explanation of your reasoning within one week after the return of the graded item. The written document need not be long but must describe the problem or issue of concern. I will carefully consider all such appeals. There will be no grading appeals after the one-week deadline has passed.

Getting Help

I realize that the course material can be challenging at times, so there are several methods to seek help outside of class:

- I am available to discuss any issues of concern to you on an individual basis either after class, via Zoom, or in my office (Fisher Hall 644). Please email me (craig.186@osu.edu) to request a meeting.
- I am available to answer questions via email.
- I address frequently asked questions under the “Resources” heading on the Carmen course site.

To help me better prepare for meetings, you can email me an overview of the subject matter you’d like to discuss.

In the past, these methods have supported effective communication. However, if you have difficulty using these methods, I want to know so that I can address any issues.

Academic Misconduct

From the [Office of Academic Affairs](#):

Academic integrity is essential to maintaining an environment that fosters excellence in teaching, research, and other educational and scholarly activities. In the [Code of Student Conduct](#), Ohio State defines “academic misconduct” as “any activity that tends to compromise the academic integrity of the university or subvert the educational process.” Cases of misconduct range from

deliberate acts of cheating to unintended missteps, in which students fail to distinguish their work from someone else's. Thus, students are expected to complete all academic and scholarly assignments with fairness and honesty.

By university rule, a professor must report any suspected instance of academic misconduct to the Committee on Academic Misconduct (COAM). A review panel of the committee will investigate the charges; decide whether or not a violation has occurred; and, if the panel finds there has been an offense, determine an appropriate penalty.

The Fisher College of Business has moreover adopted an Honor Code which applies to all students pursuing Fisher degrees:

As a member of the Fisher College of Business Community, I am personally committed to the highest standards of behavior. Honesty and integrity are the foundations from which I will measure my actions. I will hold myself accountable to adhere to those standards. As a future leader in the community and business environment, I pledge to live by these principles and celebrate those who share these ideals.

Disability Accommodation

If you need an accommodation based on the impact of a disability, arrange an appointment with me as soon as possible. I rely on the **Office of Disability Services** for assistance in verifying need and developing accommodation strategies. Please start the verification process at your earliest convenience.