Syllabus

Course info

Class meetings & Office Hours

Lecture	MWF 3:00 - 3:50pm	Cruzen-Murray Library (CML) 208
(Optional) Homework Lab	W 4:00 - 4:50pm (Tentative)	Cruzen-Murray Library (CML) 208
Office Hours	M 9:30 - 10:30am	Boone 126B
Office Hours	T 9:00 - 10:00am	Boone 126B
Office Hours	W 1:30 - 2:30pm	Boone 126B
Office Hours	TH 10:00 - 11:00am	Boone 126B

Office hours are also available by appointment, just email me!

Instructor Information

- **Instructor**: Dr. Eric Friedlander
- **Office**: Boone 126B
- **Email**: efriedlander@collegeofidaho.edu

Course Learning Objectives

By the end of the semester, you will be able to...

- tackle predictive modeling problems arising from real data.

- use Python to fit and evaluate machine learning models.

- assess whether a proposed model is appropriate and describe its limitations.

- use Jupyter notebooks and quarto to write reproducible reports and GitHub for version control and collaboration.

- effectively communicate results results through writing and oral presentations.

Course community

College of Idaho Honor Code

> The College of Idaho maintains that academic honesty and integrity are essential values in the educational process. Operating under an Honor Code philosophy, the College expects conduct rooted in honesty, integrity, and understanding, allowing members of a diverse student body to live together and interact and learn from one another in ways that protect both personal freedom and community standards. Violations of academic honesty are addressed primarily by the instructor and may be referred to the Student Judicial Board.

By participating in this course, you are agreeing that all your work and conduct will be in accordance with the College of Idaho Honor Code.

Disability Accommodation Statement

The College of Idaho seeks to provide an educational environment that is accessible to the needs of students with disabilities. The College provides reasonable services to enrolled students who have a documented permanent or temporary physical, psychological, learning, intellectual, or sensory disability that qualifies the student for accommodations under the Americans with Disabilities Act or section 504 of the Rehabilitation Act of 1973. If you have, or think you may have, a disability that impacts your performance as a student in this class, you are encouraged to arrange support services and/or accommodations through the Department of Accessibility and Learning Excellence located in McCain 201B and available via email at accessibility@collegeofidaho.edu. Reasonable academic accommodations may be provided to students who submit appropriate and current documentation of their disability. Accommodations can be arranged only through this process and are not retroactively applied. More information can be found on the DALE webpage (https://www.collegeofidaho.edu/accessibility).

Communication

All lecture notes, assignment instructions, an up-to-date schedule, and other course materials may be found on the course website, EricFriedlander.github.io/math4025sp26.

Periodic announcements will be sent via email and will also be available through Canvas and grades will be stored in the Canvas gradebook. Please check your email regularly to ensure you have the latest announcements for the course.

We will be using **Microsoft Teams** for communication. Please make sure you have access to the class team.

In class agreements

If we discuss/agree to something in class or office hours which requires action from me (e.g. "you may turn in your homework late due to a sporting event"), you MUST send me a follow-up message. If you don't, I will almost certainly forget, and our agreement will be considered null and void.

Getting help in the course

- If you have a question during lecture or lab, feel free to ask it! There are likely other students with the same question, so by asking you will create a learning opportunity for everyone.
- I am here to help you be successful in the course. You are encouraged to attend *office hours* and the *homework lab* to ask questions about the course content and assignments. Many questions are most effectively answered as you discuss them with others, so office hours are a valuable resource. You are encouraged to use them!
- Outside of class and office hours, any general questions about course content or assignments can be emailed to me.

Email

If you have questions about assignment extensions or accommodations, please email efriedlander@collegeofidaho.edu. Please see Late work policy for more information. **If you email me about an error please include a screenshot of the error and the code causing the error.** Barring extenuating circumstances, I will respond to course emails within 48 hours Monday - Friday. Response time may be slower for emails sent Friday evening - Sunday.

Check out the Support page for more resources.

Textbook

The official textbook for this course is:

- An Introduction to Statistical Learning with Applications in Python by Gareth James, Daniela Witten, Trevor Hastie, Robert Tibshirani, and Jonathan Taylor.

  - Colloquially referred to as "ISLP".
  - It's free!

Assignments

You will be assessed based on six components: homework, quizzes, a job application, a job interview, a midterm exam, a hack-a-thon, and a project.

Quizzes

Videos will be posted on the course website that you are expected to watch before class. There will be a short quiz at the beginning of class every Tuesday to ensure you are keeping up with the material.

Homework

Homework will be graded on a pass/fail basis and will be assessed via presentation. Assignments will be due at the beginning of class on Thursday. Students will be randomly chosen to present their solutions. Each solution will be followed by a discussion by the class on what did and didn't go well.

- **Honesty Policy**: If you did not complete the homework and are honest about it, you will receive 50%. If you demonstrate no understanding of the homework during presentation, you will receive a 0%.

Job Application & Job Interview

During this course you will apply to one "job". I will generate the job advertisement including a real company and base the job description on the course content and similar job advertisements. The job application will have three components:

1. A cover letter.
2. A resume.
3. A portfolio.

All three of these should be tailored to the job description and the company to which you are applying. Your portfolio will consist of self-contained data analyses of your choosing. To create your portfolio, you will be required to create a website.

After you submit your job application, you will be invited to schedule a one-hour long job interview. **It is your job to schedule your job interview with Dr. Friedlander.** The interview will include general interview questions, questions about your portfolio, and a "case interview" portion.

Midterm Exam

There will be one midterm exam to assess your understanding of the core concepts covered in the first half of the course.

Hack-a-thon

At some point in the semester we will participate in a "Hack-a-thon" as a class. Namely, you will be given a short period of time (1-3 days) to build a model and make a set of predictions. After the competition is over, you will be required to present on your model. Part of your score will be determine by how well your model performs and extra credit will be given to the top scoring individuals.

Project

During the latter portion of the course, you will complete a final project that involves a deep exploration of a problem. More details for the final project will be provided later in the course.

Grading

The final course grade will be calculated as follows:

Category	Percentage
Homework	10%
Quizzes	10%
Job Application	20%
Job Interview	20%
Midterm Exam	15%
Hack-a-thon & Presentation	10%
Final Project	15%

The final letter grade will be determined based on the following thresholds:

Letter Grade	Final Course Grade
A	$>= 93$
A-	90 - 92.99
B+	87 - 89.99
B	83 - 86.99
B-	80 - 82.99
C+	77 - 79.99
C	73 - 76.99
C-	70 - 72.99
D+	67 - 69.99
D	63 - 66.99
D-	60 - 62.99
F	< 60

Course policies

Academic honesty

TL;DR: Don't cheat!

- The job application assignments must be completed individually but you are welcome to discuss the assignment with classmates (e.g., discuss what's the best way for approaching a problem, what functions are useful for accomplishing a particular task, etc.). However you may not directly share (i.e. via copy/paste or copying) any code or prose with anyone other than myself.

- For the hack-a-thon, everyone will submit their predictions and give their own presentations. However, you are encouraged to work together. You are allowed to share code with one another. However, everyone should be able to explain what they did and everyone's projects should be unique in some way. Point reductions will be given if two individuals submit the exact same predictions.

- For the projects, collaboration within teams is not only allowed, but expected. Communication between teams at a high level is also allowed however you may not share code or components of the project across teams.

- **Reusing code**: Unless explicitly stated otherwise, you may make use of online resources (e.g. StackOverflow) for coding examples on assignments. If you directly use code from an outside source (or use it as inspiration), you must explicitly cite where you obtained the code. Any recycled code that is discovered and is not explicitly cited will be treated as plagiarism.

- **Use of artificial intelligence (AI)**: You are allowed and even encouraged to use AI tools (such as ChatGPT, GitHub Copilot, etc.) to supplement your learning. However, strict adherence to the following is required:

  - **You are responsible for all work that you submit.**
  - You must be able to **explain what every line of code does** and **explain all results** that you submit.
  - If you cannot explain your code or results when asked, you will receive a grade of 0 for that assignment.

If you are unsure if the use of a particular resource complies with the academic honesty policy, just ask.

Regardless of course delivery format, it is the responsibility of all students to understand and follow all College of Idaho policies, including academic integrity (e.g., completing one's own work, following proper citation of sources, adhering to guidance around group work projects, and more). Ignoring these requirements is a violation of the Honor Code.

Late work policy

The due dates for assignments are there to help you keep up with the course material and to ensure the teaching team can provide feedback within a timely manner. I understand that things come up periodically that could make it difficult to submit an assignment by the deadline.

- **Late Homework:** Homework is pass/fail based. Assignments are due Thursday morning. If you do not complete the assignment but are honest about it, you will receive 50%. If you demonstrate no understanding during the presentation, you will receive 0%.

- **Quizzes & Presentations:** Late quizzes and presentations will **not** be accepted without an excused absence.

- **School-Sponsored Events/Illness:** If an assignment or meeting must be missed due to a school-sponsored event, you must let me know at least a week ahead of time so that we can schedule a time for you to make up the work before you leave. If an assignment or meeting must be missed due to illness, you must let me know as soon as it is safe for you to do so and before the assignment or meeting if possible. Failure to adhere to this policy will result in a 35% penalty on the corresponding assignment.