

Fall 2020 - DS2001
Computer Science Practicum for DS2000
<https://course.ccs.neu.edu/ds2001/cs/>

<p>Dr. Laney Strange laneys@northeastern.edu OH: TF 2-4pm schedule or drop-in http://www.khoury.neu.edu/home/laney/</p>	<p>Prof. Felix Muzny¹ f.muzny@northeastern.edu OH: F 9:30am - 12:30pm drop-in or email</p>
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Fall 2020 NUFlex

DS2000/2001 are organized on the NUFlex model for Fall 2020.

- This practicum will have an on-ground scheduled classroom, with instructors and TAs present. The classrooms have been set up with sufficient space for all students to participate in person.
- You can participate synchronously in the practicum remotely, by joining a Zoom meeting.
- If you're unable to participate synchronously, we'll release practicum solutions and short accompanying videos for you to check out at any time.

In-person meetings will not be recorded.

Instructors will wear a face covering during class and we expect you to do the same. We all need to stay six feet apart, including when we are masked. We won't be able to eat or drink in class (except water). If you test positive, you will need to enter isolation as directed by the university's telehealth team. We expect that you will not come in-person to class and that you will follow the guidance from the university telehealth team to isolate and get appropriate healthcare if needed.

About This Course

This is a practicum and co-requisite for DS2000, Programming With Data. In the DS2000 lecture, you'll learn foundational data science and programming concepts. In practicum, we'll complete practice exercises, review material, and study and discuss issues related to data within a computer science context.

New programmers are welcome; we don't assume any previous knowledge and we'll start from the very beginning.

Each week, you'll complete a practicum assigned within the scheduled time. Instructors and TAs will be on-hand to go over concepts, answer questions, and lend a hand. Submit whatever you've completed at the end of the allotted time. Practicum assignments are graded on a scale of 1 (no effort) through 5 (practicum time was used wisely and solution shows significant effort).

The practicum also includes a final project. The goal of the project is to gain hands-on experience with

¹ pronunciation: "Muse-knee"; pronouns: they/them and he/him. Call them "Felix" or "Professor Muzny"

finding, importing, analyzing, visualizing, and presenting a dataset of your choosing. You can work alone or in a small group (of 2--3 members) -- you will first submit this group's topic, membership, and division of labor in a proposal. At the conclusion of the class you will submit your Python code along with any datasets you used in the project.

You'll also present your project to course staff and your classmates; this can be done in-person or on a zoom video. One of your project responsibilities is to attend the presentations (remote or real-life) of your classmates and complete at least one peer review. Your completion of a peer review is one of your practicum grades.

Instructor Office hours

Laney Strange: T/F 2-4:00pm and by appointment

- Schedule a time (via <http://www.calendly.com/laneystrange>) or drop in
- Zoom link: <https://northeastern.zoom.us/j/9054922952>

Felix Muzny: F 9:30am - 12:30pm

- Zoom link: <https://northeastern.zoom.us/j/96374839054>
- Schedule an alternate time if desired by sending Felix an email

TA Office Hours

We have office hours all week long. Please check the DS2000 website for the schedule, and keep an eye on Piazza for any updates.

TAs are here to help and happy to answer your questions about the course material, homework assignments, practicum, and the project. We expect you to treat TAs with kindness and respect; we expect the same of your behavior towards one another and towards all the instructors.

Come to office hours well before an assignment is due; they often get crowded, and if you arrive a few hours before an assignment is due, you'll end up feeling rushed and frustrated. Even if you find yourself in that unhappy situation, bear in mind that it is not the TAs' job to provide the solution for you. We host office hours so we can debug **your understanding of the material**, not your code.

Software and Communication

We'll be using Python 3 in this class. During our first practicum, we'll work together to download and setup everything you need to program with Python for your practicum assignments, homeworks, and the project.

Practicum assignments will be assigned and submitted on Gradescope. There is a gradescope set up specifically for the computer science practicum. Sign up for it at <https://www.gradescope.com/courses/151931> using entry code **9637ED**.

There is one Piazza page for all of DS2000/2001. Sign up for it at piazza.com/northeastern/fall2020/ds2000/, and make sure your email settings are turned on.

Schedule

Practicum sections meet on Wednesdays and Thursdays. Please make sure you attend only the section you've signed up for, as space is particularly precious this semester. During weeks with a Wednesday holiday, all practicum sections are cancelled.

The topics we'll cover in practicum throughout the semester will align with the material you're covering in DS2000.

The practicum assignments are designed to be completed within the 100-minute officially scheduled time. However, we know that schedules are harder to work with this semester, and so the deadline for practicums for everyone will be on Thursdays at 9:00pm Boston time. We recommend submitting your work in real-time at the end of your section, but it's OK if your preference is to submit later as long as you meet that last deadline.

Below is the tentative practicum schedule. The ordering of topics is likely to change, but dates and requirements will not.

Week #	Dates	Topics
1	Sep 9-10	Introduction. You must submit this practicum on Gradescope, but it won't be graded.
2	Sep 16-17	Variables and data types.
3	Sep 23-24	Iteration and branching
4	Sep 30-Oct 1	Ethics in data science, writing functions.
5	Oct 7-8	Lists, iteration, sentiment analysis.
6	Oct 14-15	Dictionaries, word counting, classification techniques.
7	Oct 21-22	Project work and proposal
8	Oct 28-29	Large datasets, data visualization
9	Nov 4-5	Project work and discussion
10	Nov 11-12	HOLIDAY (NO PRACTICUM)
11	Nov 18-19	Project work and discussion
12	Nov 25-26	HOLIDAY (NO PRACTICUM)
13	Dec 2-3	Presentations in practicum and remote
14	Dec 9	Presentations in practicum and remote

Evaluation

You will receive separate grades for DS2000 and DS2001. Your grade in DS2001 will be evaluated based on the following factors:

Factor	Number	Weight
Practicum Assignments (one dropped)	weekly	40%
Project + Presentation	1	60%

Final grades for DS2001 will be based on the following scale:

Letter	Range
A	95 - 100
A-	90 - 94
B+	87 - 89
B	83 - 86
B-	80 - 82
C+	77 - 79
C	73 - 76
C-	70 - 72
D+	67 - 69
D	63 - 66
D-	60 - 62
F	< 60

Practicum Assignments

We'll usually start with a short discussion, and then we will give you a practicum assignment to work on, and you will receive a grade for your participation and effort. Practicum assignments are intended to be completed within the scheduled practicum time. If you finish early, we'll have some challenge problems you can tackle.

You will also receive a grade for a peer review of another group's presentation; this will be counted as a practicum grade.

Your lowest practicum grade will be dropped, but this does not apply to the peer review.

Project

You'll work on the project throughout nearly the entire semester. We'll publish the project requirements early on, and it will be your responsibility to meet all project deadlines.

You can work alone or with a group for your project.

The last two weeks of practicum are designated for project presentations. You can deliver your presentation in-person during the scheduled practicum, or you can present at another time in a zoom meeting. Your presentation will be viewed and evaluated by course staff; you must also submit at least one peer review of another group's presentation.

Academic Integrity

Practicum assignments are graded on participation and effort; we expect that you will talk to one another during practicum and exchange ideas, concepts, and help. However, you **may not copy anyone else's code**. Note that "copying" includes any medium that transfers one student's code to another student, whether it be by showing it to them, telling to them, or by other means.

Projects are expected to be novel work. Within your project group, you'll collaborate on ideas, code, and writing, but you **may not share outside of your group**.

The university's academic integrity policy discusses actions regarded as violations and consequences for students: <http://www.northeastern.edu/osccr/academic-integrity>

In this class, if you violate our academic integrity policy, this will result in a zero on the assignment(s) in question.

Accessibility

Students who have disabilities who wish to receive academic services and/or accommodations should call the Disability Resource Center at (617) 373-2675. If you have already done so, please provide your letter from the DRC to your instructor early in the semester so that we can arrange those accommodations.