

STA 141B - DATA & WEB TECHNOLOGIES FOR DATA ANALYSIS

Winter Quarter 2022

Instructor:	Bo Y.-C. Ning	Time:	TTh 10:30 – 11:50 am
Email:	bycning@ucdavis.edu	Place:	Young Hall 194/Zoom

TAs:

1. Jue Wang - jujwang@ucdavis.edu
2. Eunseong Bae - esbae@ucdavis.edu

Course Pages:

1. Canvas: submitting homework, grades, and lecture recordings
2. Piazza: lecture notes, homework, discussions [\[Link to Piazza\]](#)(passcode: sta141b)

Class meeting times:

- **Lectures:** TTH 10:30-11:50 am Young Hall 194 (online until Jan 28, 2022)
- **Discussion:**
 - Sec. A01: W: 5:10 - 6:00 pm Wellman Hall 1 (online until Jan 28, 2022)
 - Sec. A02: W: 6:10 - 7:00 pm Hoagland Hall 113 (online until Jan 28, 2022)

Survey: Beginning of the quarter [\[Link\]](#)

Office Hours: Tuesday 1:00 – 3:00 pm [\[Zoom\]](#) (Meeting ID: 974 8994 5391, Passcode: sta141boh)

TAs Office Hours:

- Jue: Friday 10:00 am – 12:00 pm [\[Zoom\]](#) (Meeting ID: 950 9161 2042, Passcode: 176172)
- Eunseong: Wednesday 10:00 am – 12:00 pm [\[Zoom\]](#) (no password)

Waitlist and class size: Unfortunately, we are not going to increase the class size. This class has a long waitlist. If you decide you don't want to take the class, please drop immediately to make room for others.

Main References: No textbook required for this course. You will rely “heavily” on **Google**. Relevant references will be given during each lecture.

Software: The programming Python and the Jupyter Notebook

Objectives: Learn about Python libraries for scientific computing; learn strategies to collect data from a variety of sources using Python; learn about how to create interactive visualizations.

Prerequisites: STA 141A

Tentative Course Outline:

I. Introducing python libraries for scientific computing (~ 3 weeks)

- Python; Jupyter; Version Control
- Numpy; Pandas
- Static Visualization; Matplotlib

II. Strategies to collect data from a variety of sources using Python (~ 4 weeks)

- Web APIs; JSON format
- Web Scraping; XML format
- Natural Language Processing
- Databases; SQL

III. Interactive visualizations (~ 2 weeks)

Grading Policy:

- **Participation** (8%) You must participate office hours (either TA's or mine) at least once and piazza at least once. Attendance does not count as participation.
- **Assignments** (50%) There will be 5 assignments. Short assignments will be graded for correctness. Long assignments will be graded with a rubric that measures the quality of your writing, graphics, and code. The rubric will be available on Canvas.
 - Assignment grades are never dropped. If you can't turn in an assignment on time and have a legitimate excuse (such as medical emergency), email me before the deadline to arrange an extension or alternative.
- **Final Project** (30%) For the final project, you will work in teams of 3-4 people. Groups of 4 will be held to a higher standard than groups of 3. You need to find team members by yourself before the third week and submit a proposal before the sixth week. The project will be due in finals week. More details will be given after the third week.
- **Final Presentation** (10%) In week 10, each group will present preliminary results from their project to the class. Each group can either elect a leader to present results or choose to let everyone in the team to present. You are required attend and provide feedback on presentations from some of the other teams. More details about presentations will be released in week 8.
- **Extra credits:** There are two ways to receive bonus points
 - Homework (2 points per homework): receive full credit + show great effort (e.g., explain your code in great details or doing more than asked). TAs and graders have the right to make the judgement, but only less than 5% will receive the credit for each homework.
 - Active participation: Since participation is the best way to get help and verify that you understand the material, active participants (e.g., ask good questions on Piazza or during office hours; actively answer other students' questions on Piazza) will be more likely to get an A+ or, e.g., move the grade from C+ to B-.

- **Grade scale:** *A*– to students who score 90%, *B*– to students who score 80%, *C*– to students who score 70%, *D*– to students who score 60%.
- We must be fair to everyone in the class and cannot raise a single student's grade, thus, please avoid sending emails to the instructor or to the TAs asking to raise one's score.

Important Dates:

Homework #1	TBA
Homework #2	TBA
Team member list due	At the end of the third week
Homework #3	TBA
Homework #4	TBA
Final project proposal due	At the end of the sixth week
Homework #5	TBA
Final Presentation due	TBA
Final Report & Peer review due	TBA

Piazza: All questions regarding the course contents and organization, should be posted on Piazza so that all students can participate in the discussion. You are encouraged to answer course contents questions posted by other students.

NOTE:

- Please sign up for this class at: piazza.com/uc_davis/winter2022/sta141b (passcode: sta141b)
- Please do not post homework questions close to the homework submission's deadline: you may not be able to get the answer on time.
- The TAs and I are here to help you during office hours; if you want to ask questions outside the office hours, please post your question on Piazza. The TAs and I will monitor the channel, and answer when needed.
- Be polite and respectful to others.
- Search before you post. Your question may have already been asked and answered.
- When you post a question, explain the context and give an example of what you mean.

[\[Google form\]](#)

Code of conduct: Students must adhere to the UC Davis code of conduct <https://ossja.ucdavis.edu/code-academic-conduct> to an external site.. Violations of the code of conduct include (but are not limited to!) communicating and collaborating during midterms, copying, attempting to copy and letting someone copy a graded assignment; doing someone else's Homework/exam/project assignment; to have someone else doing one's Homework/exam/project assignment; to share Homework/exam/project assignment; to submit work that is not yours. The fact that the violation did not benefit you directly, does not mean that it is less important.

One of the responsibilities delegated to faculty by the UC Davis Code of Academic Conduct is to report suspected academic misconduct to the Office of Student Support and Judicial Affairs (OSSJA). Thus, any violation will be reported, and students found guilty will get an F, no matter the extend and type of their violation. Please, do not do it.

Academic Honesty Professional programmers talk to their coworkers and use references to help solve programming problems, so I encourage you to:

- Discuss the problems with your classmates.
- Search for references online and in books.
- Adapt short pieces of code (≤ 10 lines) you find on Piazza or online. When you do this, you must cite the source. For Piazza, cite the post number. For other sources, cite the title, author, and URL.

That said, all writing and graphics must be your own work. At least 75% your code must be your own work. In addition, you must add comments to the code you wrote. If you're unsure whether something is okay, please ask!

Students need accommodations: Any student needs special accommodations (e.g. physical, learning, psychiatric, vision, hearing, etc.) who needs to arrange reasonable accommodations must contact the Student Disability Center (SDC). Faculty are authorized to provide only the accommodations requested by the SDC. If you have any questions, please contact the SDC at 530/752-3184 or sdcc@ucdavis.edu.

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Acknowledgement: The course material is developed based on the courses taught by Dr. Nick Ulle at UC Davis.