Codeup Syllabus

Ursula Cohort: October 03, 2023 - March 18, 2023
[Ursula Franklin](#)

Communication and Contact

Email

Email **staff-ursula@codeup.edu** with any questions, comments, or concerns related to the classroom. Students will be expected to check (and respond to) their email on a regular basis (at least once a day).

Slack

Codeup will also communicate through Slack, a workplace chat / instant messaging tool. Students will be expected to be active in Slack throughout class time.

There are two slack channels students will primarily interact with - `#ursula` and `#ursula-questions`
> `#ursula` is used for general classroom announcements
> Examples:
> - An announcement of when the next lecture starts
> - Getting progress status of current work
> - Communication with the rest of the Codeup staff specific to cohort
>
> `#ursula-questions` is specifically for asking pointed technical questions
> Examples:
> - A classmate's question about the current exercises
> - A classmate's question about some python code related to the current project
> - Clarifying questions from instructors
>
> `#data-science-students` is a larger chat room for DS alumni and current student

Google Classroom

Google Classroom is an online management system for grades, assignments, announcements, and course material.

Topics Covered

We will cover other topics as well, but this table outlines the major areas we will focus on, and corresponds to the top-level modules in the curriculum.

TOPIC	DESCRIPTION
FUNDAMENTALS	Intro to Data Science
TOOLS	Command Line, Version Control (Git), SQL, Python, Tableau, Stats
METHODOLOGIES I	Classification, Storytelling, Regression, Clustering, Time Series Analysis

METHODOLOGIES II	Anomaly Detection, Natural Language Processing (NLP), Distributed Machine Learning, Advanced Topics

Curriculum

All students will be given access to Codeup's data science curriculum, located at http://ds.codeup.com. All lessons will be found here (instructors may adapt these lessons to fit their style) and exercises. Students are expected to read the lessons prior to the lesson being delivered. Occasionally, instructors will provide paper handouts or share code samples electronically. Supplemental material will also be shared in Google Classroom. Lecture and exercise notes will be shared through GitHub.

In addition to the materials provided in-class, students should plan to organize their own notes to keep track of shared resources. Students are encouraged to do their own research and utilize external resources as well.

Classroom Conduct

In general, students are expected to be respectful of the learning environment.

Do
- Ask questions, while giving others time to talk
- Collaborate with and help out your peers
- Be curious and seek out new challenges
- Silence your cell phone
- Take short breaks when needed
- Respect your peers and their questions, everyone comes from a different background, and there are no bad questions

Don't
- Engage in off-task activities during class time (e.g. YouTube, Netflix, news sites, video games, social media, etc.)
- Be out of the classroom for long periods of time
- Call and text on your cell phone
- Have a side conversation during a presentation or lecture
- Discourage others
- Sleep in class
- Engage in negative speak

All of these things are to help ensure your success in the class and in the career that you are investing in.
We ask that you leave the classroom to perform non-classroom related activities.

Attendance

If you are not going to be present for any reason, email **staff-ursula@codeup.edu** to let us know.
Class starts at 9:00 every morning. This doesn't mean you should show up at 9, rather, you should be ready to begin at 9, meaning you should be present at least 10 to 15 minutes prior in order to review the past day's material and

prepare for the current day.

- Arriving later than 9:00 but earlier than 9:15 counts as a tardy
- Arriving later than 9:15 counts as a half day absence
- Leaving before 4:45 counts as a half day absence (3:45 on Monday)
- Leaving after 4:45 but before 5:00 counts as an early departure

Covid

If you test positive for COVID-19, you must notify HR@codeup.edu as soon as possible. They will relay current covid policies.

Grades

Your grade is made of the following components, all of which are cumulative:

ITEM	PERCENTAGE	DESCRIPTION
ATTENDANCE	10%	Daily attendance tracking
EXERCISES	20%	Module exercises
QUIZZES	30%	Performance on quizzes
PROJECTS	40%	Performance on projects

- The exercises for a module are due by 9:00 am the day we start the next module
- Exercise completion will be determined based on the work turned in and the code on your GitHub account
- No credit will be awarded if naming conventions for files are not followed or work is not pushed to GitHub by due date
- Quizzes will be in-class and a combination of written and multiple choice questions and/or coding questions

Grading Periods

Progress reports will be delivered at the end of each grading period

1. Up to and including SQL
   - Fundamentals
   - SQL
2. Up to and including Tableau
   - Python
   - Stats
   - Tableau
3. Up to and including Regression
   - Classification
   - Storytelling

- Regression
4. Up to and including AD
    - Clustering
    - TSA
    - AD
5. Up to and including Capstone Review Panel III
    - NLP
    - Spark
    - Capstone

How to Get Help

The primary way to get your questions answered is by asking them in the classroom during classroom hours both during lessons and during exercise time. During lessons, **please ask questions!** You are likely not the only one with the question, and asking it will help out a classmate as well as you.

During exercise/project time, seek help in the following order:
1. Google and other online resources
2. Classmates
3. TA's (if available)
4. Instructors

We want you to ask questions, and we are teaching you to seek help in the ways considered best practices in the field.

Do NOT sit with unanswered questions too long. You will fall behind and once you fall behind, it's hard to catch up because the course moves quickly in order to cover all the material.

Being able to ask for help is a skill. Therefore, it is something you can practice and get better at. Make it a strength. The sooner you start asking questions, the more successful you will be. Both in the classroom and the workforce. Own your success.

An alternative to asking verbal questions is to ask questions in the `#ursula-questions` slack channel. This way, you are asking your classmates, TA's and instructors all at once. Whoever can answer it first, will do so. In addition, other classmates who may have the same question will be able to see the answer and then they benefit as well.

Exercise Time == Office Hours

Colleges offer office hours because classes meet a few times a week for an hour. However, Codeup meets every day, so the *best* time to ask for help is during class time. If you have questions on the exercises or topics, there is ample exercise time to ask for help.

Study Hall Hours

While the primary time for questions and help is during classroom hours, Codeup also offers, by request, study halls before or after class for questions or issues that cannot be answered or addressed during classroom or exercise time. So if you have sought support during regular class hours and you need more, feel free to schedule time with an instructor for 1:1 help and guidance.

To schedule a 1:1, email **staff-ursula@codeup.edu**. Be prepared with a specific topic, questions, or an assignment to work through during your 1:1.

Teamwork / Collaboration

Data science is not a solo activity. You will be expected to work collaboratively with your classmates, both informally throughout the course, and formally, in the form of pair and group projects. You *will* work with different classmates for each project.

You should communicate in a professional manner with your teammates. If you need to miss class time during an assigned group project, for example, you should inform both instructors and also your teammates.

Standing Homework

Students are expected to work outside of classroom hours to keep up with the course, including reading ahead in the curriculum, finishing incomplete exercises, and practicing with external resources.

You should push code to GitHub daily. This is vital to protecting your code and its history, as well as building your professional brand. You will be expected to push to GitHub at least once every class day, unless otherwise informed. These pushes will be monitored in-class.

Presentations / Code Demos

Throughout the course you will be called upon to demo, or present, your work to the rest of the class.

Presenting your work and talking through your approach is a key skill that employers desire. Every time you present your work, you will be that much more prepared for job interviews.

All work and presentations must be submitted as directed prior to the start of presentations. The projects will be graded on a rubric that may not be available ahead of time to simulate workplace practices. You are expected to read the rubric once it is returned to you, as it contains valuable information about expectations and general best practices in an analysis report or a data science project.

An excused absence that leads to missing a presentation will need to be coordinated with instructors through **staff-ursula@codeup.com** so that it can be made up within *two days* of returning.

Any unexcused absence that leads to missing a presentation will cause you to lose *all* points for the presentation.

Zoom

For virtual classes, Zoom, with video, is how we will take attendance. Unless otherwise arranged with the instructors, you will be marked absent if you are not on the classroom zoom call with video turned on by 9:00 or if you leave the classroom zoom. Students are expected to use their real names (the name you go by) as their names on zoom.

When on a classroom zoom call, students are expected to keep themselves muted unless they are actively speaking.

Schedule

Classroom Hours

DAY OF WEEK	START	LUNCH	STOP
MONDAY	9:00	12:30-1:30	**4:00***
TUESDAY	9:00	12:30-1:30	5:00
WEDNESDAY	9:00	12:30-1:30	5:00
THURSDAY	9:00	**12:00-1:30***	5:00
FRIDAY	9:00	12:30-1:30	5:00

*deviations in release times

Important Dates

event	date
First Day of Class	2023-10-03
NO CLASS – Indigenous People's Day	2023-10-09
NO CLASS – Veterans Day	2023-11-10
NO CLASS – Thanksgiving	2023-11-22 - 2023-11-24
NO CLASS – Winter Break	2023-12-18 - 2023-12-29
NO CLASS – New Years Day	2024-01-01
NO CLASS – Q4 Dept Offsite	2024-01-08
NO CLASS – Martin Luther King Day	2024-01-15
NO CLASS – Staff Development Day	2024-01-26
NO CLASS – President's Day	2024-02-19
NO CLASS – Staff Development Day	2024-02-23
Graduation/Capstone Presentations	2024-03-18

Tentative Lesson Schedule

Dates subject to change based on individual cohort classroom experience.

week	subject
2023-10-02	welcome L00 welcome day welcome L01 environment setup fundamentals L00 python 101 fundamentals L00 what is data science fundamentals L01 explore hyperdoc fundamentals L02 pipeline fundamentals L02 pipeline demo fundamentals L03 quiz
2023-10-09	fundamentals L04 project CLI/GIT L00 cli CLI/GIT L01 git SQL L00 overview SQL L01 dbs & tables SQL L02 basic statements SQL L03 clauses
2023-10-16	SQL L04 functions SQL L05 group by SQL L06 indexes & joins SQL L07 subquery SQL L08 case statements SQL L09 temp tables
2023-10-23	SQL L10 quiz python L00 intro python L01 datatypes python L02 control structures python L03 functions python L04 imports
2023-10-30	python L05 checkbook ds_lib L01 numpy ds_lib L02 series ds_lib L03 dataframes ds_lib L04 advanced df
2023-11-06	ds_lib L05 matplotlib ds_lib L06 seaborn ds_lib L07 quiz tableau L00 stats L00 overview stats L01 simulations stats L02 probability distributions

2023-11-13	stats L03 hypothesis testing overview stats L04 analysis of proportions stats L05 correlation stats L06 analysis of means stats L07 quiz classification L00 overview classification L01 acquire classification L02 prepare
2023-11-20	classification L04 explore classification L05 eval
2023-11-27	classification L06 preprocessing classification L07 model overview classification L08 decision tree classification L09 random forest classification L10 knn classification L11 logistic regression classification L12 project
2023-12-04	classification L13 quiz storytelling L01 overview & understand storytelling L02 create storytelling L03 refine and present storytelling L04 project
2023-12-11	regression L00 overview regression L01 wrangle regression L04 explore regression L03 scale regression L06 feature engineering regression L05 eval
2024-01-01	regression L07 model regression L08 project
2024-01-08	regression L09 quiz clustering L00 overview clustering L01 wrangle clustering L02 explore clustering L03 model clustering L04 using clusters
2024-01-15	clustering L05 project TSA L00 overview TSA L01 acquire TSA L02 dates TSA L03 prepare
2024-01-22	TSA L04 explore TSA L05 model TSA L06 project

2024-01-29	individual project AD L00 overview AD L01 continuous methods AD L02 discrete methods AD L03 time series AD L04 clustering
2024-02-05	AD L05 project NLP L00 overview NLP L01 regex NLP L02 acquire NLP L03 prep NLP L04 explore
2024-02-12	NLP L05 model NLP L06 project capstone L00 proposals due spark L00 overview spark L01 environment setup spark L02 api
2024-02-19	spark L03 wrangle capstone L00 pitches due advanced topics L01 tidy data advanced topics L02
2024-02-26	advanced topics L03 capstone L02 capstone work capstone L03 capstone work capstone L04 capstone work
2024-03-04	capstone L05 capstone work capstone L06 capstone work capstone L07 capstone work capstone L08 capstone work capstone L09 capstone work
2024-03-11	capstone L10 capstone work capstone L11 capstone work capstone L12 capstone work capstone L13 capstone work capstone L14 capstone work
2024-03-18	graduation L01 Graduation