

## **CS 5800 Final Project**

Spring 2022 Semester

We will end this course with a Final Project, where you will put together the techniques, skills, and insights you have learned in this course to answer a question that is important to you.

For this Final Project, you will work in a group of size  $N$ , where  $N=3$  or  $N=4$ . You are welcome to select your own groups for this Final Project. (*Note: every group must be of size 3 or 4, no exceptions.*)

For your Final Project, you will **pose a question** that is of interest to you and answer it to the best of your ability by applying one or more topics/modules covered in this Algorithms course.

The Final Project is incredibly open-ended, and all I ask for (and insist upon) is that the question you choose is important to each of you.

**By 11:30PM on Monday April 18th**, you will submit a **Final Project Proposal** (roughly 1000 words) which must contain each of the following:

- A **context** that will help the reader understand your topic, and why this topic is personally relevant to you. Provide one paragraph for each member of your team.
- A clearly defined **question** that you wish to answer.
- A clearly defined **scope** for your project: given the short time frame of this final project, what do you intend to examine and what do you intend not to examine?
- A clear **description** of what you have done in the Final Project thus far, as well as what you plan to do over the next two weeks, with specific details. (Don't forget that you have a "Course Synthesis" due on May 5<sup>th</sup> 2021.)

And then over the last two weeks of the course, you will have lots of time to work on your Final Project. I will also make time outside of my normal office hours, holding additional Office Hours, if any group would like to set up an appointment with me.

Our final class week is ends on April 29<sup>th</sup>, 2022. The last assignment to submit will be a 10–15-minutes video presentation of your work. You need to make the video with your partner(s) and host this on youtube and share (or submit the link). You will need to **ONLY submit the video, presentation slides and a pdf document with your project report**. Note the presentations on video, you need to submit the link **ONLY**.

Your Final Project will be marked out of **50** and will be worth 10% of your final course grade.

This assessment will be divided into your **Final Project Presentation** (worth 15 marks) and your **Final Project Report** (worth 35 marks).

Your Final Project Presentation will be evaluated on your organization, clear communication, effective use of visual aids (e.g. PowerPoint Slides, Computer Program), and keeping to the required time limit.

Your Final Project Report will be evaluated on the following criteria:

- **Introduction (5 marks)**: a context that will help me understand your chosen topic, with a clearly-defined question inspired by your issue with a rationale that explains what you are doing and why. I'd also like a couple of paragraphs where you tell me why this particular topic is important to you, and why each of you in the group is personally invested in answering this question.

*NOTE: you can just copy and paste that section of your Final Project Proposal to form your Introduction!*

- **Analysis (25 marks)**: a description of the methods you used to gather your data and/or solve your problem. What did you do and why? Show clear steps throughout every step of your analysis, referencing specific topics/modules covered in the CS 5800 course. If you produced a computer program (e.g. in Python/Java/C), make sure you submit the relevant computer program as an Appendix to your .pdf report. I recognize that each report will be different, so I will customize these 25 marks to align with the specific nature of your project.
- **Conclusion (5 marks)**: based on your analysis, answer your question. Then discuss the weaknesses and limitations of your project and suggest avenues for future research. And finally, conclude with a paragraph (one separate paragraph per group member) describing what you learned from this project, and whether this report will be of any value to you – either for a future Northeastern course, or for some other project or endeavour you wish to pursue upon your graduation from Northeastern.

*Please note: I will not give you a “page limit” because some reports will naturally be longer than others. Your goal is to address each of the points listed above: if you do that, you will do very well on this Final Project Report.*