

Beyond the Mouse GEOS F436/636: Project requirements

Project? What project?

The class project deals with a scientific data analysis task that is of interest for the individual student. The requirements are different for graduate (GEOS F636) and undergraduate (GEOS F436) students.

- For undergraduates, the project counts the same as a lab. For graduate students it counts 30% of the class grade.
- For undergraduate students, we don't expect you to have your own research data. For graduate students, it is normal to have your own data.

Good sources of a project are: Previous classes (eg in the geosciences), undergrad research or student assistant jobs.

Requirements

For both graduate and undergraduate students, the project has to be presented as a GitHub Repository. There has to be a README.md file that either contains your whole project write-up or explains where to find it (eg other .md files in your Reports/ directory). To style the text in the file(s) you use the Markdown language:

<https://guides.github.com/features/mastering-markdown/>

Other requirements:

- Your writeup has to contain at a minimum the following sections:
 - Introduction: You describe the scientific question, and basic methodology
 - Data: You describe the data. For simple data files, describe it in detail. For complex data retrieved from URLs, it is enough to provide a high-level description
 - Results: Describe the outcome of the data processing task
 - Optional sections are Discussion, Field methodology (if applicable)....
- There has to be some sample data
- For grad students: There has to be processing code *written by you*
- There has to be at least one illustration that visualizes an aspect of the data, in the Results section. *For grad students: The visualization has to be produced by your code.*

The main difference between an undergrad and a grad student project is the presence of your own processing code. Undergraduates that fulfill the more advanced requirements can get extra credit.

Deadlines

Students deliver a short (5 min) presentation on their projects either on Tuesday Dec 4 or Thursday Dec 6. All changes must be made and the GitHub repository URL made available to the instructor by Friday Dec. 7.

Tip

Here is a good minimal directory layout to get you started. Even if you don't have any files in some directories yet, a directory for a completed research project should similar to this.

Start today creating your project directory, and then use GitHub Desktop to turn it into a Git repository and upload it to your U Alaska GitHub account

```
BtMProject/
|—— README.md
|—— Code
|—— Data
|   |—— Intermediary
|   |—— Processed
|   |—— Raw
|—— Figures
|—— Reports
```

Evaluation criteria

	Undergraduates	Graduate students
Project timely & complete in a GitHub repository	15%	10%
README/web page readable and well laid out	20%	15%
Introduction explains science background	15%	10%
Data section describes data	10%	10%
Overall structure is clear and complete	20%	10%
Code is present, well-written, generates figure	extra credit!	20%
At least one relevant and useful illustration	10%	10%
Project addresses a useful task	10%	15%