Semester Project Introduction

Assignment Overview

All students will complete a semester project worth 15% of their total grade to demonstrate and apply the skills acquired throughout the semester. The semester project builds upon itself slowly rather than submitting a large project at the end of the course. Make sure to implement valuable feedback after each grade is received. Your work for this project includes using real-world data sets from your specific domain of interest ([or using one of the samples provided](https://elearning.mines.edu/courses/52392/pages/domain-specific-data-sets)) and highlights the stages of our data science workflow (e.g., data acquisition, preprocessing, model selection, results and evaluation). Undergraduate students are highly encouraged to form a team of up to three members. Undergraduate students may work independently, however, keep in mind, the workload might be heavy. Graduate students must work independently.

*Students enrolled in the graduate-level version of this course, will work independently and complete a more in-depth analysis with additional tasks, such as related work, ethical considerations, and ideas for future work (details provided in items 3, 8, and 9 below).*

Assignment Template

Here is a  [semester project template](https://elearning.mines.edu/courses/52392/files/5459196/download?wrap=1)[Download semester project template](https://elearning.mines.edu/courses/52392/files/5459196/download?download_frd=1)to help you organize your thoughts and make sure you have all the required information in your final report!

Grading and Timeline

Submissions are connected to the weekly course content and build upon the previous submission; all leading to the final report and video presentation. With the exception of the getting started discussion board in week 3, each document (and video or video link) shall be one per group.

Format Expectations

I expect a professionally formatted pdf submission (e.g., 12pt font, single or double spaced, grammatically correct, 8-10 pages). I trust your judgment on the style and length of the paper, but you need to fully address each aspect outlined in the template.

Project Time Line

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| **Semester Project Timeline & Points** | | |
| **Due** | **Submission** | **Points** |
| Week 3 | **Getting Started and Team Formation**  Discussion board submission (individual submission): start thinking about what problem you would like to solve, locating a dataset, and finding team members. | 100 |
| Week 4 | **Proposal**  **Template Items 2 & 3**  -Overview  **-(Grad Student - Related work)** | 100 |
| Week 5 | **Weekly Update #1**  **Template Items 4, 5 & 8**  -Data Acquisition  -Preprocessing  **-(Grad Students - Ethics)** | 100 |
| Week 6 | **Weekly Update #2**  **Template Items 6**  -Model Selection | 100 |
| Week 7 | **Weekly Update #3**  **Template Items 7 & 9**  -Results & Evaluation  **-(Grad Students - Future Work)** | 100 |
| Week 8 | **Final Report**  **Template Items 1-9**  -Title Page  -All other components | 425 |
| Week 8 | **Video Presentation**  Submit a video or video link to Canvas (5 minutes) - This video should be a short presentation similar to what you would give to a boss or an advisor. Your stakeholders should be able to view your video and understand what your project was, your findings, any recommendations you would have, or any potential social or ethical implications of your work. | 500 |
|  | Total Points | 1425 |