

Exploration Assignments

The goal of the exploration component of the assignments is for you to teach yourself more about a topic beyond what's been covered in the assignment itself. It should be related to the material in the assignment and lectures, to something from the readings, or to a relevant topic or concept you found on your own and are just curious about.

Grading Rubric

Explorations are graded according the elements in the table below. The scores in the column headers indicate the number of points possible for each rubric element (given in the rows). Explorations are encouraged, but optional for undergraduates, but required for graduate students.

For undergraduates, Explorations count as extra credit. The points are simply added to the overall score for the assignment. Feel free to do the exploration whenever you feel like you have ideas you'd like to explore that would required that much additional effort.

For graduate students, they are expected and are worth 10% of the assignment grade. They can be used for the course project and an opportunity to get feedback, but they will be graded according the rubric below and must be significantly different from any previous explorations. If you are submitted an updated exploration for your project you must explain in detail what progress you have made and how it is different from what you submitted previously.

The general focus at each assignment level is as follows:

- **Basic:** Factual information and basic concepts. The aim is to improve understanding by interpreting, clarifying or illustrating a concept or fact in a novel way. This could be something you found on the web, a paper, or book.
- **Intermediate:** Applying concepts or implementing techniques. Similar to what was done in the assignment, but with novel data or exploration.
- **Advanced:** Analyzing multiple related concepts at a higher level to organize or differentiate them. Could also involve evaluating the generality of concepts or the effectiveness of techniques.

Rubric elements:

- **Novelty:** Is this your own creation or was largely copied from a reference? Does it reflect your *personal* background and conceptual process of understanding?
- **Pedagogy:** Is this an effective tutorial? Would a person unfamiliar with the concepts be able to understand them?
- **Clarity:** Is the document well-organized and well-written? Are the figures easy to follow?
- **Depth:** How extensive is the exploration? How much effort was required? For graduate students, this is worth 10% of the assignment grade so it should represent about 10% of the total effort. For undergraduates, this is extra credit of up to 5% of the assignment.

Scoring: The total score for the exploration is out of 12 points (4 elements X up to 3 points each), but these will be scaled to +10% or +5% of the assignment score for graduates and undergraduates respectively.

Element	Insufficient (0)	Basic (+1)	Intermediate (+2)	Advanced (+3)
Novelty	Copies existing source with only minor modifications; lack of source references.	Concepts are similar to those in assignment or class but with novel elements or different examples from other sources.	Deeper exploration of concepts or adds exploration of multiple related concepts.	Explores concept not covered in the assignment or not discussed at length in lecture.
Pedagogy	No clear statement of concept(s) being explored; lack of motivating questions.	Simple exploration with adequate motivations and tutorial explanations.	More elaborate and effective illustrations of concept(s). Demonstrates a deeper level of understanding.	Also illustrates or clarifies relationships among related concepts or explains conceptual difficulties or addresses potential misconceptions.
Clarity	Lacking or confusing explanation; no explanation of motivations.	Explanations are present, but unclear, unfocused, wordy or contain too much technical detail.	Clear and concise explanations of key ideas and motivations.	Also clear and concise, but includes illustrative figures or diagrams.
Depth	Content is trivially short or very similar to problems already completed.	Short, but sufficient to address the other rubric elements.	More extensive; clearly required more effort.	Required extensive time and effort.