Instructions for Writing a Research Proposal

Another major requirement for the students is to develop a research proposal in an area that is related to one or more topics represented by the presented literature. However, they will not be required to complete the research or carry out any substantial data analysis. The goal is to help the students understand the key elements of a successful design and implementation of a scientific research proposal.

Research Proposal Outline (10%)

Early on in the semester, each student will select a research topic and present in-class a single slide containing: (1) Definition of a research question; (2) Summary of the approach conceptually; (3) Suggest a potential quantifiable outcome that may be obtained from the proposed research.

Midterm Exam (20%)

The students will further develop his/her research proposal and present in-class an experimental design (~15 minutes) followed by submitting a written summary that addresses the technical and design aspects of a question, including:

1. What question are you going to address in your research?

2. What data will you (hypothetically) collect?

3. What methods will you use to analyze the hypothetical data?

4. What kind of results will you get from such data analysis?

5. How would you interpret the results?

1. How will you validate your interpretations?

Final Exam (20%)

The students will continue to develop his/her research proposal and present in-class followed by submission of a written document that addresses the following questions:

1. What is the significance of your research?
2. Does this address an important question?

2. Do you have a solid research design?

3. Will the results convincingly support your hypothesis?

4. What kind of impact will your research have in the community?