

M 358K PROJECT PROPOSAL

Due Date: Monday, February 27 (This is the next class day after the first exam. The reason for having the project proposal due right after the exam is to encourage you to combine your study of Chapter 3 for the exam with working on your project proposal.)

Purpose of the proposal: i. To gain experience working out the details of a design for a statistical study (steps 1 and 2 on the Term Project Description).
ii. To be sure that you have a good study design *before* you start to collect data. This can avoid later problems. Do *not* start on your data collection until I have approved your proposal.

What to include in your project proposal:

Note: Different items may be more or less important, depending on the project you choose.

Be sure to refer to the handout Term Project Description for details as needed.

1. The names of all people in your project group. (Remember that there should be three or four students in each group.)
2. The question you intend to study. Be sure it is clearly, precisely, and carefully stated. (*Note:* Usually it takes several revisions to get from the original formulation of a question to one that is clearly and precisely enough stated to continue with the rest of the project, so be sure to spend enough time on this part. You may need to pare down your original question to something more feasible for a single study. You may ask more than one question, if you choose, but all questions should be answerable with the same study design.)
3. Why you think this question is interesting.
4. The population or populations you will study. (*Be precise.*)
5. The variables you will study:
 - Identify each one clearly.
 - Identify each as categorical or quantitative.
6. How you will measure each variable. (*Be precise.*)
7. The type of question (I - VII on the term project handout). *Explain why* it is of that type.

8. Whether your study will be an observational study or an experiment, and *why* your choice is appropriate.

9. How large your sample will be, and *why* this size is appropriate. (See Term Project Description handout for guidelines. You will need to include an estimate of the size of your population.)

10. *Details of*

- a) *how* your sample(s) will be chosen (sampling frame, method of randomization, size, etc.)
- b) *why* your sample size is appropriate (see considerations on Term Project Description handout)
- c) *why* your sampling method is as unbiased as possible (Be sure to think about possible confounding variables.), and
- d) *why* your sampling method will produce the type of sample(s) needed from the population(s) you are studying. (Unless you are comparing two or more populations, your sample should be a simple, random sample.)

11. Any other details of how you will gather your data. For example,

- a. If your study involves asking questions:
 - Give the *exact wording* you intend to use
 - Explain *why* this wording is best possible.
 - Be sure to try out your questions for clarity on several people not in your project group. If they have to ask what the question is asking, or if they misinterpret the question, then your wording is not clear enough.
 - Also give details about *how* the questions will be asked (Orally? By giving a form to fill out? By telephone? By email? In person? More than one way? By whom?)
 - Explain *why* your choice of how the questions are asked is best possible (e.g., does it make a difference who asks the questions?).
 - Discuss any other relevant details (e.g., measures to ensure confidentiality or anonymity if appropriate).
- b. If your study involves an experiment, give *precise details* of:
 - the treatment(s)
 - how subjects will be assigned to treatment or control groups
 - any other details of the design of the experiment. (e.g., where and when it will be conducted.)
- c. If your study involves human subjects, describe how the ethical guidelines (see Term Project Description) will be followed.

d. If your study overlaps two or more of the above categories, give all relevant information that applies.

12. Discussion of possible confounding variables or other sources of possible bias, and what measures you will take to try to minimize them.

13. Discussion of possible difficulties you might encounter in collecting your data, and how you have tried to minimize such difficulties or their effects in designing your study.

Format of Proposal:

Please address the questions above in the order given, and numbered as above, so that both you and I can more easily check whether you have covered everything needed.

Miscellaneous:

Be sure to consult Chapter 3 as needed in preparing your project proposal.

Your proposal should be written in good English, typed or clearly handwritten, and as long as necessary to include everything that is required. (Using a word processor and keeping a copy on disk would be wise, so you can minimize rewriting if you need to revise your proposal.)

Your proposal will count as 25% of your project grade. (Since your project grade will count as 20% of your course grade, this means that the proposal will count as 5% of your course grade.)

If your project is acceptable (with possibly only very minor changes needed), you will receive your proposal grade when your proposal is returned. However, you must make any minor changes required before being approved to go ahead and collect your data.

If your proposal is not acceptable (more than very minor changes needed) the first time you hand it in, you will be required to revise it and turn it in again, *but* your maximum possible score will be reduced. You will need to continue turning in revisions (with reductions in maximum possible score) until your proposal is acceptable.

You *may* change your project question after turning in your proposal, *but* must have a new proposal approved before beginning your data collection.