Student Projects

These notes come from the Chance Instructor’s guide. For more information on the Chance project, see: http://www.dartmouth.edu/~chance/

Student projects in a Chance course typically fall into one of two categories.

In one type is students ask a question, devise a plan to collect data to answer the question, collect and analyze the data, and present the results in written and oral reports. A second type is a research report on a topic of interest that may have come up in class, discussion, Chance News, or on a video. This report involves reading articles in magazines, journals, and newspapers, summarizing the issues involved, and drawing conclusions. Samples of student projects are included in the Chance Database.

Sample guidelines given to students from U of M Honors Seminar

1. What is a project?

A project is a report and poster display that focuses on a topic involving Chance, and is completed instead of a final exam.

Projects may be completed individually or by a small group (2-3 students).

You may choose to do a project on any topic that interests you that involves Chance. Your project may be one of the following:

a. A research report on a topic that interests you that may have come up in class, discussion, Chance news or on a video. This report would involve reading articles in magazines, journals, and newspapers, summarizing the issues involved, and drawing conclusions. The paper would be 5-10 pages in length, typed, with a reference list.

Examples of possible topics include:
The use of DNA fingerprinting in the courts, The reliability of opinion polls, the controversy on second hand smoke and cancer, the roll of statistics in studying the AIDS epidemic, the use of statistics in weather forecasting, the statistics of gambling, the census undercount, card shuffling, etc.

b. A project that involves gathering and analyzing data. If you have had a statistics course already, or if you haven't, but would like to apply techniques you've read about in the textbook, you may want to design and conduct a statistical study. This study may involve developing a survey or set of interview questions on a topic of your choice, selecting a sample, and administering your instrument. The responses will be summarized and a report written, describing what you did and what you found out. Or, you might
want to design an experiment (a series of taste tests, or some other experiment of interest). Again, you would gather data, analyze it, and write up the results.

c. If you have another idea for a project that sounds different that the two types listed above, see me.

2. How can I help you?

First, I will ask you to write up a proposal for your project, telling me if you are planning to work alone or in a group, and what you propose to do. I will help you refine your ideas into a workable project.

As you proceed with your project, I will share materials I have with you, help you locate resources, and help you enter and analyze data (if this is part of your project).

I will distribute guidelines for writing the final project reports, and criteria to be used in evaluating the projects.

I will be glad to review drafts of papers or portions of papers as they are written.

Chance Project Format

You will submit a written report for your project as well as make a poster display for our in-class Chance Fair. Both forms of your project should include the following components:

1. **Statement of the Problem:** Purpose of your project. What problem(s) or question(s) did you set out to solve? What were the key issues raised?

2. **Background:** Preparation for conducting the project. Describe how you prepared for your project. What type of background reading did you do? What information did you use in order to better conceptualize your project and frame a design?

3. **Method:** What you decided to do and how you did it. How did you gather information (via experiment, survey, or other data collection method)?

4. **Results:** The summary and presentation of data gathered. This may include tables, graphs, and/or verbal summaries.

5. **Conclusions:** What you learned about the problem(s) or question(s) you set out to solve.
6. **Critique**: What you learned about the process of doing your project. What went wrong? What would you do differently next time? What advice would you give future students in this class?

**Posters**: Large print should be used, and information on each component may be fairly brief. Try to use a catchy title that captures the nature of your project.

**Evaluation criteria for posters**:  
1. Does the poster include each of the 6 components?  
2. Is the material clearly displayed?  
3. Does the poster convey the most important aspects of the projects?

Note: The ASA introduction to the Poster Competition book gives nice guidelines for developing a poster.

**Papers**: should be double-spaced and 5 to 10 pages in length (group papers may be longer). Any standard format is fine (e.g., APA, U of Chicago, etc.). An appendix should include a list of your actual data and a copy of the survey or data recording form you used (if you used one.). A brief reference list should include any of the resources included in your background reading.

**Evaluation criteria for papers**:  
1. Does the paper include each of the 6 components, with each component clearly labeled with a title?  
2. Is the paper clear and easy to read, with correct usage of statistical terms?  
3. Does each component include the appropriate material and make sense?  
4. Is an appendix included containing appropriate materials?  
5. Does the reference list include appropriate references?

**Chance Project Progress Report**

1. What is the topic of your project?  
2. What are the main issues or problems you plan to address?  
3. What are your plans for obtaining information? What resources do you plan to use in developing your project?  
4. If you are planning to gather data, please describe your data gathering plan, including sample size and number of variables measured.  
5. If you are planning to develop and give out a survey, please list below the questions you are planning to use.
Project Progress Report: 2

1. How far along are you on your project in terms of each of the following:
   a. Background reading
   b. Data collection
   c. Data analysis
   d. Reporting of results
   e. Planning and design of poster

2. What questions and/or concerns do you have about your project?

Guidelines for both types of project are included in the appendix.

6.5 Group activities

There have been many proposals in the educational literature for using cooperative group activities to enhance student learning. Small groups may be used in different ways in a Chance course: to discuss an article in the news, to generate data for an in-class activity, or to work on a project outside of class.

We have found that groups of three or four students work best. Groups may be formed in many different ways, including allowing students to form their own groups, randomly assigning students to groups, or having students number off to form the designated number of groups. Groups may be kept the same or changed throughout the course.

Suggestions for helping groups to work include:

   a. Make sure each group has a clear sense of what they are to do and accomplish and how they are to demonstrate or report the group result.

   b. Assign group roles for in-class activities to make sure that all members participate and to help students going on their assigned task. These roles might include the jobs of leader/moderator, reporter, recorder, summarizer, and encourager.

   c. Monitor the groups to see how well they are working by walking around, observing, and listening. Instead of answering questions asked by an individual group member, first ask if anyone in the group knows the answer to that questions.
For more information on groups, an article on Cooperative Learning is included in the Appendix.