

## Experiment and Analysis Assignment (1/3 of Grade)

There are **THREE** parts to this assignment. First, in **Part 1** you and your group will run an experiment in class using your fellow classmates as subjects. In **Part 2** you and your group will analyze the results and write up a report of at least 2 pages. Finally, in **Part 3** you and your group will propose a new experiment (a new set of treatments) that builds off of the one you ran in class but answers a new question (or improves on the answer to an old one). You and your group will then write up a report of at least 3 pages motivating and describing this experiment.

This assignment will be conducted by a group of students and I expect all members of the group to participate. If I learn that any member of a group has not been a full participant in planning, running or analyzing their experiment and reports, I reserve the right to reduce his or her point total relative to other members of the group.

### Part 1

You and the other members of your group will conduct an economics experiment on your fellow students in class. You will be given a sheet containing your group number, the date on which your group will run its experiment, and which experiment(s) are to be run. I reserve the right to adjust specifics of these assignments as the course proceeds.

The experiments you will run will come from one or more of the following three sources:

1. Experiments described in the back of our textbook “Markets, Games and Strategic Behavior” (look for the **gray pages** in the back). Your assignment packet will give the relevant chapter(s). In each case the surrounding ideas and typical results of the experiment is described in the chapter itself and the instructions and decision sheets for the experiment are described for the corresponding chapter at the back of the book (on gray pages). Part of your assignment will involve photocopying the decision materials and procuring the other materials (decks of cards, dice) for conducting the experiment. (None of the experiments will actually involve paying participants in cash. Procedures describing randomly selecting a participant to actually be paid actual money should be ignored.)
2. In several cases I will include an additional set of instructions and decision sheet in your packet, describing an additional experiment. Again the decision

sheets I provide must be copied and distributed when you run the experiment.

3. Group 6 will run an experiment using the online software veconlab in the last week of class and this experiment will be run in the EBEL experimental lab in North Hall.

Your group will be graded on the following criteria for Part I:

1. **Understanding of the Experiment(s):** Before running the experiment I expect you to fully understand the experiment and to know all of the details of how it works. You must be able to answer questions about the rules of the experiment and you must show that you know the experiment and procedures inside and out. If you are confused about how the experiment works you will lose points.
2. **Clarity of instructions:** You should explain the experiment in a clear and organized way to your fellow students prior to the experiment. It is vital that all participants in the experiment understand the rules.
3. **Experimental control:** You must not reveal what the experiment is meant to study or in any way attempt to influence participants in their decisions. Participants must know exactly how they can earn points but you should otherwise not influence their decisions either directly or indirectly.
4. **Organization:** When you run the experiment, your group should have a very clear idea of how you are going to actually implement the experiment and be well prepared for contingencies. You must have all of the materials together and ready for deployment and the members of the group must be coordinated in their tasks. I want to see that you have worked out (and even rehearsed) exactly how you are going to run the experiment.
5. **Timeliness:** Some of the experiments will be very quick. Others will push the limits of the time available in class. You will be penalized for failing to use time efficiently and especially failing to run the experiment during the class.

I expect you to return all of the materials used to run the experiment within 2 weeks so I can use them for grading purposes (this means in order to do Part 2 you should plan to transfer information from the decision sheets to a spreadsheet or photocopy them within two weeks). In every experiment, it is vital that subjects place their class ID number (assigned in the first week of class) in the upper right hand corner of decision sheets for grading purposes.

## **Part 2**

The second part of your group experiment assignment is to **analyze** the data you have collected. The attached handouts also explain exactly what the analysis of the data must consist of **at a minimum**. Finding and writing about other interesting patterns you discover in the data will be **richly rewarded**. Your report will usually

be at least 2 pages and often somewhat longer. The report on the results should not be filled with fluff but also should not be rushed.

1. **Completeness and Accuracy of Data Analysis:** Your packet will include instructions on what I want you to analyze in the data. I expect all of the instructions to be satisfied. I also expect you to turn in the original data sheets and spreadsheets containing the raw data input from the decision sheets. I will sometimes check these for accuracy and expect to find them perfectly accurate.
2. **Professionalism of Presentation:** I expect numerical results to be presented in professionally formatted tables. I expect graphs and plots to be clearly labeled and formatted so that the results are very easy to see. You will be penalized for ambiguity in the presentation of the results. You also may be penalized for going overboard and developing plots that look like cartoons!
3. **Accuracy of Written Analysis:** Your written description of the results should show that you have read and digested the reading material and should accurately characterize what the data actually tells us. They should also include a comparison of how the results compare to the results from analogous experiments described in our readings.
4. **Originality in Data Analysis:** If, looking at the data you find new additional ways to look at the data or discover interesting patterns I did not ask for, you will get extra points. I want to encourage you to try exploring your data a bit to see what you find.

### **Part 3**

In Part 3 you and your group will design a new experiment that builds off of the ones you ran in class. (If you and your group are inspired I will let you propose an experiment on a different topic instead.). You will write up a report that is long enough to actually do your idea justice and long enough to convince me that you are posing a clear question with your proposed design! This usually means at least 3 pages but I am not strict on page limits – what matters is that you clearly communicate and motivate your idea.

In the report you will pose a specific research question related to economics/game theory/decision theory (or a set of such questions) and explain why the question is interesting or important. You will then describe in sufficient detail an original experiment designed to answer this question, complete with proposed parameters and treatments. You will sketch a set of hypotheses and explain how testing these hypotheses will answer your motivating research question(s). If there is relevant microeconomic theory that makes predictions for your experimental design, I expect you to explain what these predictions are. You will then explain exactly what you would do with data from the experiment to test your hypotheses. In some cases this might be simple (i.e. compare the average of Treatment 1 to the average of

treatment 2 with a t-test); in others it might be more complex (i.e. run a regression comparing variable X to variable Y).

You should feel free to meet with me to discuss your group's idea(s) prior to submitting the report to get my feedback on the idea.

I will be grading your report for **Part 3** on the following criteria:

1. **Originality:** The new experiment must either pose a new question or pose an old question in an interestingly new way. You cannot simply take an experiment from the book or an experiment you found online and repeat it. This must be an original creation of your group's.
2. **Non-Triviality:** The question the experiment asks has to be an actual question we don't know (or don't "pretty much" know) the answer to. For instance if your experiment boils down to the question "do people prefer more money to less money", it is not a real question: all else equal we already know that people prefer more money to less. Less directly, questions that have been pretty much answered by previous experiments are not interestingly new questions.
3. **Motivation:** The question the experiment poses should be relevant to understanding how human beings or social/economic/political systems operate. You should make a convincing case for your question being interesting and important.
4. **Unity:** The questions, hypotheses and experimental design discussed in your report should all be tightly related. The hypotheses should be such that testing them would really answer your motivating question. The treatments or parameters proposed in your experiment should be designed so that running the experiment would allow you to reject (or provisionally accept) the hypotheses. These three components of the report have to be unified.
5. **Clarity:** The report has to be written in clear, grammatical and well-edited English. Your thoughts and arguments should be well organized. If I have trouble following your argument, if important details are ignored or if the report is structured in a confusing way you will lose a lot of points on this assignment. This is a report a reader should be able to understand as they read it without having to skip forward in the report.
6. **Concreteness:** The report should not be vague about the hypotheses or (especially) the experimental design. I want to know exactly what happens in the experiment and in each treatment.
7. **Economy:** The report's language should not be flowery or showy and it should not be padded with irrelevant material. Long, protracted discussions that have little to do with the paper will result in lost points. Overly ornate prose will result in lost points. The paper should be straightforward and clear and it should get to the point without trying to be fancy. Avoid filler material to pad the size of report all cost as this will likely result in lost points. Get right to the point and stay there!

The report should begin with an introduction that gets right to the point and **immediately** describes the question the experiment was designed to answer. After summarizing your ideas in the introduction you should describe your experiment in detail, pose your hypotheses, explain how testing these hypotheses will answer your question and explain in a precise way what you would do with the data to test your hypotheses.