Course Description

This class provides an introduction to the design and analysis of economics experiments. The topics covered will be useful to anybody interested in running scientific experiments, but will be primarily geared toward behavioral experiments as conducted by economists and psychologists.

Textbooks

Required:

Recommended:

Grades

Expect to work 15-20 hours per week on assignments for this course. Unless otherwise stated, all assignments are due at 11:55 pm, EST by the end of Thursday (see specific due day on Blackboard).
**Homework (28%)**

Six (6) Problem Sets and Eight (8) Reading Assignments will be handed out.

You need to submit your works on Blackboard before the due date. Refer to the course schedule and weekly overviews for details.

**Presentation (12%)**

You need to present one paper from the reading articles in the syllabus. Each presentation lasts for 10-12 minutes. You need to prepare a 8-12 pages slides for the presentation.

You have to register for your presentation [in this shared form](http://mason.gmu.edu/~dhouser/courses.htm). Please choose different paper from your classmates.

**Midterm (20%) + Final Exam (25%)**

The midterm will be on Week 8 (Oct 13) and it covers the first half of the course. The final exam will be on Week 15 (Dec 8). Both exams are in class-time.

Group discussion is not allowed. Late submissions will not be accepted. No make-up exams will be offered, if you miss the midterm with a valid excuse, its weight will be shifted to the final. Exams missed for unexcused reasons will receive a score of 0.

**Final Paper (15%)**

The purpose of this assignment is to give you experience in specifying a research question and then creating an experiment design and data analysis strategy to answer that question.

The paper will be structured as an actual academic research paper, taking the reader from research question to conclusions. Importantly however, as explained below, you won’t be expected actually to run your experiment.

**Outlines**

Notes are available at Houser Website [http://mason.gmu.edu/~dhouser/courses.htm](http://mason.gmu.edu/~dhouser/courses.htm)

1. **Science and Experiments**
   - *Box, Hunter & Hunter, Chapter 1; Cox, Chapter 1; Houser website, Lecture 1*

2. **Review of Basic Statistics**
   - Probability distributions, parameters, statistics
     - *Box, Hunter & Hunter, Chapter 2; Houser website, Lecture 2*
3. **Comparing Two Entities**
   a. Relevant reference sets and distributions
   b. Randomized Paired Comparison Design
   c. Blocking and Randomization
   *Box, Hunter & Hunter, Chapter 3; Houser website, Lecture 3*

4. **Comparing k treatment means**
   a. Completely Randomized Design - One-way ANOVA
   b. Randomized Block Design - Two-way ANOVA
   *Box, Hunter & Hunter, Chapter 4; Houser website, Lecture 4*

5. **Designs with more than one blocking variable**
   a. Latin squares
   b. Greaco and hyper-graecolatin squares
   c. Balanced incomplete block designs
   *Houser website, Lecture 5*

6. **Repeated Measures**
   a. Introduction
   b. Standard ANOVA for repeated measures without order dependencies
   c. Comments on repeated measures designs that address order and sequencing effects
   *Houser website, Lecture 6*

**Reading Articles**


Students with disabilities

Students with Faculty Contact Sheets for this class need to present them to the instructor as soon as possible. Other students requiring reasonable accommodations, as covered under the Americans with Disabilities Act, should contact the Disability Resource Center (DRC) to open up a DRC file and discuss needed accommodations. Questions and requests for reasonable accommodations should be directed to DRC, 234 SUB I, phone (703) 993.2474 or email dwyne@gmu.edu.

Honor code

George Mason University is an honor code university. Students pledge not to cheat, lie, plagiarize or steal in academic matters.