Laboratory in Human Cognition
Psychology V89.0046
Spring 2012

Instructor
Todd Gureckis, todd.gureckis@nyu.edu, 280 Meyer, after class Monday, or by appt.

Teaching Assistant
Vince Chuan, vince.chuan@gmail.com, tbd.

Writing Instructor
Zach Udko, zbu200@nyu.edu, office hours by appointment

Schedule
Tues and Thurs, 2:00pm – 3:50pm, 159 Meyer.

Course Description
This course provides hands-on experience with the standard experimental tools used in cognitive psychology research. Students run experiments, collect and analyze data, write research reports, and design and run a new experiment as a final project. Additionally, students read and analyze research papers that use complex and expensive experimental methods that cannot be directly explored in the classroom. Content areas include memory, categorization, attention, learning, automaticity, and visual perception. Lectures introduce new skills that apply not only in analyzing, communicating, and presenting scientific work, but more broadly how to effectively communicate complex scientific ideas. The course culminates in an intensive final project involving the design and analysis of a novel experiment.

Laboratory Software
We will be using a combination of open-source tools for running experiments and performing statistical analysis. Thus, there is nothing to purchase! We will use Microsoft Excel and perhaps other tools such as R for data analysis**.

Readings
There is no textbook for this course. However, the following may come in handy in writing your reports:

*   *Publication Manual of the American Psychological Association* (5th ed.). (2001). Washington, DC: American Psychological Association.

No readings from this book will be assigned, and much of the content, is available on-line via judicious Google searches. There will be other readings made available as PDF files or handouts in class.

Experiments
We will be collecting data in four experiments in class, using each other as experimental subjects. The data will be compiled, then analyzed in class and written up outside of class. The final project will involve proposing, implementing, running, and writing up an experiment in a group.

Attendance
Attendance and participation in lectures and labs is essential. There are in-class tasks and assignments in most class periods that cannot be made up later. Attendance at in-class experimental data collection sessions is mandatory. Students who are absent during data collection will receive a 50% penalty on the lab report for that experiment, no exceptions.

Writing
Lab reports will be APA-style research reports. Specific assignments will be explained in handouts and discussed in class. Reports will be graded on the quality of the ideas and thinking, prose style, and on adherance to APA format. Lab Report 1 will be reviewed by the Writing Instructor, and all students are required to submit one additional lab report for review at least three working days prior to the due date.

Teams
For some (but not all) assignments, students will be assigned to work in teams. Teamwork is an important skill in successful research and in life. In scientific research, papers often include an acknowledgements section which details the contribution of each author. Each assignment completed in a team must include a similar statement of the specific contributions of each person.

Readings

To supplement the hands-on-skills developed in this course, we will read a number of real, life (sometimes cutting edge) research papers together. Some of the papers will focus on the different types of data available to experimental psychologist including fMRI, EEG, MEG, eye-tracking, etc. There will be short assignments related to these papers, as well as in-class discussion and tours/demonstrations of some of NYU's equipment (when possible).

Grading
Grades will be weighed as follows:
- 10% attendance, participation, and in-class assignments
- 25% final project
- 15% assignments on readings
- 50% lab reports (12.5%, 12.5%, 12.5%, 12.5%)

There may be opportunities for small amounts of extra credit, such as for brief presentations to the class on various topics.

Academic Misconduct
All work that students turn in must be their own work. Group assignments, all work must have been done by the students on the team, and must include an acknowledgements section detailing the contribution of each team member. Any outside sources (articles, books, people) must be appropriately cited in written assignments. Turning in someone else's work as your own is unacceptable and will result in a failing grade. On the basis of past experience with intellectually lazy students, I have written an automated algorithm written in python that can detect examples of copying from electronic sources such as Wikipedia in submitted papers (yeah it is so easy to plagiarize even a computer script can do it!). More importantly, such behavior is academically dishonest and lazy. Submit only your own ideas and words, or there will be consequences to your academic career.

Research Ethics and Misconduct
Although the experiments performed in this class are for educational purposes, and therefore not covered by the usual informed consent regulations, we will try to treat the confidentiality of the data as if it were. Falsification of any data or analysis will result in a failing grade for the course. (Note that grades are not based in any way on getting statistical significance or any particular result!)

**Statistics Software
Note that part of the class will be learning to use R and excel software packages for data analysis. We will be teaching these skills in the class. However, if you find that you need extra assistance, the Bobst library provide statistical consultants who are familiar with these packages. According to their webpage:

> Consultation information will be available on the 6th floor in rooms 620 and 621* via e-mail
> (data.service@nyu.edu), telephone 212-998-3434, by appointment or on a walk-in basis. Staff and student consultants
> will offer free tutorials and workshops on a variety of statistical packages. Sign up for fall software tutorials on the library's
> classes page: http://www.library.nyu.edu/forms/research/classes.html

Class Schedule
Each class session may cover several of a variety of topics and tasks. The schedule below is guaranteed to change! Check the class webpage for the most recent information (http://smash.psych.nyu.edu/courses/spring12/lhc/)