Syllabus
APSY 210 - Statistics For Psychology - Fall Semester 2016
Sep 20, 2016 Version (subject to revision and posted on the class web site)

Time: TTH 1:15-2:35 Place: SS134
Professor: Bruce Dudek Office: SS 327 Hours: Tues: 3-4:00; Wed: 1-2:30
Web Page: http://www.albany.edu/psychology/bcd/210pub.htm
also reachable via professor Dudek's web page in the Psychology dept. web site.
Lecture materials and additional readings will be placed there.
The password protected part of web site will be explained in class.
Monitor the web site for changes in this syllabus. The web site is considered the official syllabus for the course and contains expanded treatment of topics in this printed version, including course philosophy and objectives, study guides, and other web resources.
Email: bruce dot dudek at albany dot edu; phone: 442-4824 (email is much better)
TA: Joe Donahue, SS, 318. Office hrs: TBA
Email: jdonahue AT albany DOT com

Help sessions and additional office hrs will be listed on the course web site.

Also, see the Psych Dept Statistics Course Support page: http://www.albany.edu/psy/statistics
An additional set of TA's are available and their hours are listed on this support page. These TA's are primarily assigned to graduate student instructors of other sections of 210. But they can also help students in our section if you cannot get to our TA (Joe) or professor Dudek.

Course Objectives:
1. Acquire the concepts, terms, and symbols used in data analysis
2. Learn to formulate research ideas that can be evaluated with statistical analysis
3. Learn to perform appropriate operations to draw conclusions from data
4. Become skilled in interpreting and communicating quantitative information via numerical analysis and graphical display

Texts:
Required: Aron, Aron and Coups. *Statistics for Psychology*. Pearson, 2013, 6th Ed.
The campus bookstore has available a custom version of this text that also includes an access code for MyStatLab, which is required. If you buy used texbook from some other source, you will not have this web software access.
You should plan to keep your statistics textbook after the semester is over. You will need it for later courses and independent studies, so I cannot recommend renting it. In addition, a purchase of a fully electronic copy of the textbook only gives and one year access, so is also undesireable.
Companion web site for the textbook:
The MyStatLab web interface contains much valuable information and study aids. We will discuss its usage in some detail in class.

Grading (subject to modification, depending on class size - any changes by 2nd class meeting):
Exams -
- Three 55 min exams will be given during the semester, plus a cumulative final exam.

- Your score from the lowest of the three intra-semester exams will not be included in the final course point total. Each of the other two intra-semester exam scores will count for 25% of the final course point total.
- A cumulative final exam will count 24% of the final course point total.
- All four exams must be taken - cannot simply miss one intra-semester exam and use it as a dropped score.
- There is a course grade penalty of one whole letter grade (e.g., C+ to D+,) if one of the three intra-semester exams is missed.
- Missing the final exam would result in automatic course failure.
- Tentative/earliest possible dates for the three 1 hr intra-semester exams are Sep 22, Oct 18, and Nov 22.
- Note that the final exam date/time is fixed: Fri, Dec 16, 10:-30 AM.
- No make-up exams are given without **prior consent** of the instructor (email communication preferred); and make up exams are given only for documented illness. If you are sick, you still need to communicate with the professor **before** any missed exam in order for a make up to be considered and a valid note from a medical professional is also required.

Homework Assignments -

- Eight homework assignments will contribute 16% of the course points, and are due at class on the dates specified.
- Each homework assignment is worth two points, one for a good faith effort at completion and one for correctness of the answer.
- Late homework assignments will not be accepted.
- Additional sets of exercises will also be suggested and can be reviewed in help sessions.

Pop Quizzes -

Five pop quizzes will be given at random dates throughout the semester, can occur at any time during the schedule class. Each will be worth two points toward the course point total. Missing more than two of these pop quizzes will result in a letter grade penalty for the course grade (e.g., B+ to C+) in addition to zero points on those missed quizzes - no makeups for pop quizzes.

MyStatLab work -

MyStatLab will be used as a supplemental workbook. All assigned modules must be completed, on time, or a course grade penalty of one letter grade will result. These modules will not be graded. Detailed information on MyStatLab usage will be available early in the semester.
It is possible that some homework assignments will be done via MyStatLab. Some bonus work may become available via MyStatLab.

Grading will be done on the basis of the total point distribution (scaled to 100 total points) from the two mid-semester exams, the final exam, the homework assignments, and the pop quizzes.

Typically an A- is defined as 90% of the highest point total in the class, B- as 78% of that total, C- as 68 and D- as 58%. The instructor may shift these values down to provide a better fit to the actual point distribution. By scaling to a % of the highest point total in the class, each student has a much better chance of receiving higher grades than if no re-scaling were done.

Course Philosophy:

1. Statistics classes are more like language classes than math classes. Notation and symbols are new, like a different alphabet. Concepts are interdependent, like words/phrases/sentences have syntax and grammar rules. Learn by repetition/rehearsal.
2. Numeracy is important - comfort level with working with numbers. However, the math skills required for this class are minimal - mostly middle school arithmetic with a small amount of algebra. Everyone can easily do the math.
3. Good performance in this course is related mostly to work/effort, management of your time, and careful attention to detail and organization of your daily schedule. Follow instructions and the many suggestions that the instructor provides.

Behavioral Objectives for the Student:

1. COME TO EVERY CLASS. Crucial. Exams are written to evaluate the perspective on the material that was generated in lecture.
2. Commit to putting in 2-3 hrs outside class for every hour spent in class, NOT including assignments.
3. Get in the habit of reading the text book material twice before lecture on that topic. Once for a quick skim/overview, and one in some detail, working through numerical illustrations and Set I practice exercises. Then, after lecture, immediately do all practice exercises, and assignments on that topic.
4. The textbook has great exercises and practice problems at the end of each chapter in addition to what you can find in MyStatLab. It is the expectation of the instructor that you will put in the work to do ALL of these practice problems, and exercises. This is how the material is best learned. **Learn by doing** - Not just listening in class!!
5. Falling behind and attempting to master several chapters' material at once is a recipe for disaster. Commit to spending some time on this course nearly every day - even if that is just a 15-20 min review of lecture notes or textbook/workbook work.
6. COME TO REVIEW/HELP SESSIONS. And, take advantage of the TA assigned to the class. Get in the habit of contacting the instructor/TA with questions, even if they seem minor.

What Kind of Calculator or Software Do You Need? How much computing will we do?

Only a very simple calculator. You will not need the high level programmable calculators used in HS math. I actually prefer Excel or a comparable spreadsheet to calculators. Spreadsheets can greatly facilitate computations required for this class. Use of a spreadsheet will be required (it can be a great time saver). NOTE: cell phones cannot be used during exams, so make sure you have access to a calculator or can use Excel or R as a calculator.

Excel is on the Information Commons machines and the google spreadsheet application can be used online by anyone. Use of either Excel or an open-office type spreadsheet on your own computer would be the preferred choice. Excel will be required for several class assignments.

You may find it helpful to use SPSS or R on the Information Commons Machines to perform double checks on your hand calculations or to explore the textbook sections on SPSS usage, but it is not required.

Some SPSS and R usage will be demonstrated in class. You will be required to read some output from these statistics packages, but not to program them, although it is not difficult to make SPSS do the types of analyses we do in APSY210, and your textbook has many sections that provide SPSS instruction.

Classroom Behavior, Phones, Electronic Devices.

In order to make the most efficient use of time in the classroom, please adhere to the following:

1. Come to class on time! Critical. Much of the first few minutes of class is about class logistics, perspective, and emphasis. It sets the stage. If you come late, you WILL miss important things. Just as important.... if you come late, you interrupt the class for other students.
2. No cell phone or electronic device usage is permitted class. The exception is if you use a laptop or tablet computer to take notes. If you do use a portable device to take notes, internet usage for non-class items is prohibited. If you have been accustomed to leaving the classroom to take a cell phone call or read/reply to a text message, understand that this behavior is not acceptable in APSY210.
3. Once class begins, getting up and leaving the room briefly is to be avoided. It disrupts class. Go to the restroom before class. Get your phone usage out of the way before class. Movement in and out of the room is disruptive to all students.

Schedule (subject to change and posting on class web site)

Week of	Topic	Readings In Textbook
Aug 29	Introduction; Exploring and Describing Data	1,2
Sep 5	Introduction; Exploring and Describing Data	1,2
12	Probability, distributions, sampling	3,4
19	Hypothesis testing	4,5
26	Hypothesis testing	4,5
Oct 3	Hypothesis testing	5
10	More on hypothesis testing; Tests of Means	7,8
17	More on hypothesis testing; Tests of Means	7,8
24	Relationships: Correlation, Prediction and Regression	11,12
31	Relationships: Correlation, Prediction and Regression	11,12
Nov 7	Relationships: Correlation, Prediction and Regression	11,12
14	Experiments and tests of multiple means	9
21	Experiments and tests of multiple means	9,10
	No class Nov 24	
28	Effect sizes and power	6
Dec 5	Categorical outcome variables	13, 14?
	Dec 8 is our last class meeting day	

Additional Perspectives, Notes, and Recommendations:

The reading schedule is constructed under the assumption that a first reading of assigned material will be done prior to the lecture on the respective topic. The best strategy is to get as far ahead in your reading as possible. Lectures are most beneficial when a first reading of the material is completed prior to the lecture. Second and third readings can then be used to reinforce, clarify and crystallize your understanding of the material after its lecture. Don't be hesitant about using other textbooks or web resources. Other authors' presentations are almost always slightly different, and such differences may be quite helpful. It is essential that students do the practice exercises from each chapter of the textbook.

There is, of course, no attendance requirement *per se*, although the pop quiz requirement is an indirect attendance requirement. However, since exams will have a great emphasis on topics as presented in lecture, adequate performance usually presupposes the conceptual framework generated in the lectures. Study solely from the texts is unlikely to enable adequate performance on exams. Missing classes in this course is a very bad idea.

Extra Help sessions can be scheduled, regularly, with higher frequency at points prior to each exam. These will be provided to go over practice problems and to clarify lecture material. Notification and location will be provided a few days in advance of these sessions.

Performance is expected to conform to the University requirements on Academic Integrity. **Students are required to read the section in the University bulletin on this topic**, including the sections on plagiarism, examination cheating, and multiple submissions: http://www.albany.edu/undergraduate_bulletin/regulations.html. In this regard, homework and other assignments for this class are presumed to be prepared without assistance from others, except the instructor and TA.
Violations of these regulations will result in course failure.

GENERAL EDUCATION SUPPLEMENTARY PAGE

Course: APSY 210 Statistical Methods in Psychology
UAlbany Gen Ed Category: Mathematics and Statistics

COURSE DESCRIPTION AND OBJECTIVES

This course is designed to cover the methods of analyzing quantitative data in psychology and the behavioral sciences. The relation of each of the various methods to the design of experiments.

CHARACTERISTICS OF ALL GEN ED COURSES

1. Gen Ed offers introductions to the central topics of disciplines and interdisciplinary fields.
2. Gen Ed offers explicit rather than tacit understandings of the procedures, practices, methodology and fundamental assumptions of disciplines and interdisciplinary fields.
3. Gen Ed recognizes multiple perspectives on the subject matter, reflecting our pluralistic culture within and beyond the university.
4. Gen Ed emphasizes active learning in an engaged environment that enables students to be producers as well as consumers of knowledge.
5. Gen Ed promotes critical inquiry into the assumptions, goals, and methods of various fields of academic study; it aims to develop the interpretive, analytic, and evaluative competencies characteristic of critical thinking.

LEARNING OBJECTIVES FOR GEN ED MATHEMATICS AND STATISTICS COURSES

Courses in Mathematics and Statistics enable students to demonstrate:

- knowledge of concepts, terms, and symbols used to analyze data
- an ability to formulate problems in abstract form amenable to mathematical, statistical, or logical analysis
- an ability to perform appropriate operations to draw conclusions from data
- an ability to interpret and communicate quantitative information

HOW DOES THIS COURSE AIM TO FULFILL THESE LEARNING OBJECTIVES?

APSY 210 enables students to:

1. acquire the concepts, terms, and symbols used in data analysis
2. formulate research ideas amenable to mathematical, statistical, or logical analysis
3. perform appropriate operations to draw conclusions from data
4. interpret and communicate quantitative information