

Summer 2010

01:830:210 – Behavioral Data Analysis

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Office Hours: Wednesdays, 1:15 – 2:30, and by appointment

Web Page:

Course information will be available to students enrolled in the course on a Sakai web page.

Textbook:

Karlin, Robert. A.. *Behavioral Statistics in Simple English.*, 5th Edition, Revision 1.

You will also need a Turning Point XR clicker (which allows free-form entry). If you have one from another course, you can reuse it.

To be available at New Jersey Books, 37 Easton Ave.

About This Course:

Many people think Behavioral Data Analysis is a course intended to make their lives difficult. In fact, the principles and techniques you will learn in this course can improve your life. We will talk about how to interpret and understand various forms of data and claims that are made about what those data mean. While the purpose of this course is to teach you how to analyze data you may gather and interpret data that are presented in the psychological literature, you will also see how you can apply the information discussed in the course to situations outside the classroom.

The course is structured to give you several presentations of each concept in a variety of formats. For each topic, you will read the book, hear it described and explained in lecture, do the Computational Practice Exercises, and go over them, answer questions on the Online Exam, have a second discussion in a review session in lecture, and have the opportunity to review the book, your notes, Computational Practice Exercises, and Online Exams as you study for the exams in class. As psychologists, we know that providing multiple exposures spread over time leads to better and longer-lasting learning than a single intensive (e.g. cramming) exposure. All this may seem like it is a lot of work, and repetitive. But this is done by design, and if you stick with the program, you should finish the course with a good grasp of the material.

Grading:

- **Exam:** There will be one exam based on the text and other materials presented in class. You are responsible for bringing pencils with erasers to the exam. Exam scores will be posted in the SAS Gradebook; a link will be available on the course web page.

The exam is given in two parts: a conceptual part, consisting of multiple choice and/or essay questions, and a computational part. Each part is worth 200 points. You may use your book, notes, and calculator for the computational part, but not for the conceptual part. You may not use any electronic device other than your calculator. You may not use your cell phone calculator.

For the computational part of the exam, you must show your work. If you write down the correct answer, but don't show how you arrived at it, you will receive no points. If you set up the problem correctly and make a minor computational error, you will receive most of the credit for the problem. Each error reduces your score. If your answer is obviously incorrect (for example, you compute the mean of 3, 5, and 7 to be 86), you will receive less credit.

If you miss the exam for a legitimate reason (e.g., illness), you must provide written documentation in order to be allowed to make up the exam.

If an exam is cancelled or postponed on the day of the exam, there will be a member of the Psychology Department in the room at the scheduled time to make the announcement. Notices posted on doors or the blackboard are likely to be hoaxes.

- **Computational Practice Exercises:** Each chapter contains several sets of Computational Practice Exercises (CPE). The questions are in each chapter, set off from the text by rows of asterisks. The answers are in the back of the book.

CPE are due in at the beginning of each lecture as indicated on the schedule below. CPE **must** be turned in at the beginning of lecture; they cannot be placed in mailboxes or turned in late.

Each set of CPE is worth 14 points. The purpose of the CPE is to help you understand the material, so you receive the full 14 points for completing the CPE and turning it in (on time). Since the answers are in the book, it would not make sense to correct and grade them based on

how well you did them. If you take the time to do them, and rework the ones you get wrong, it should be reflected in your exam scores.

The point of the CPE is to give you a chance to use what you should be learning to solve problems. The answers are in the book so you can tell whether or not you understand the concepts involved. However, I don't expect people to spend hours and hours on them. If you can't seem to figure out how to solve one of the problems, put down as much of the solution as you have, and then write a note that says "This is as far as I can get with this problem." If it looks like you have made an honest effort at solving the problem, you will get credit for it.

Make sure you make a copy of your CPE before handing them in. These can be helpful to you as you review material and study for the exams. Check the SAS Gradebook regularly to be sure you have received credit, and contact your instructor promptly if there is a discrepancy.

There are 5 sets of CPE, each worth 14 points, for a total of 70 points.

- **Online Exams:** Online Exams are available via eCompanion at www.rutgersonline.net -- note that it's a .net, not a .edu address. You will be enrolled in the course automatically; your login is your NetID, and your password is your date of birth in YYYYMMDD format (unless you changed it in a previous course). You may also access them at ecollege.rutgers.edu using your NetID and regular password. The exams consist of conceptual and computational questions, like the class exams. They are different in that they are entirely multiple choice. You can get credit for guessing the right answer to a computational question; this will not work for the exams in class. However, you will be better off actually trying to solve the problems.

There are 4 online exams, each worth 60 points, for a total of 240 points. (The exams that you see are worth 20 points; your score on each will be multiplied by 3.) The schedule for the online exams appears below and is on the eCompanion Home Page. Note that the availability dates are fixed; extensions cannot be granted for individual students.

Taking the Online Exams: You are allowed 2 hours for each exam. Make sure you will have an uninterrupted 2 hours before you start the exam. If you log out for any reason after you start the exam, the clock keeps running. If your internet connection drops briefly, you should be able to log back in and continue, but you should be sure to save your answers after you answer each question. Click on "Submit for Grade" only when you are sure you are through with the exam. Once you submit your exam, you cannot work on it any more. You will be able to see your score, which questions you answered correctly, and the correct answers to each question, in the eCompanion Gradebook after you submit your exam. If there is a problem while you are taking the exam (e.g., you lose your internet connection and the exam has timed out before you have a chance to get back to it), email your instructor and explain the situation. Your instructor can reset the exam so that you can take it again. Your instructor also has a life, so if you wait until 11:30 on the last night an exam is available and you run into a problem, you will probably be out of luck.

- **Clickers:** We will be using Turning Point XR clickers in class. During each lecture, there will be a few questions related to the reading assignment for the class. A correct answer is worth 3 points; an incorrect answer is worth 1 point. There may also be some "data gathering" questions used to get data whose analysis will be discussed in the next lecture. Responses to these questions are worth 1 point each. In each lecture, either the first or last Clicker question will be chosen at random to be worth one additional point, just for answering.

Clicker points will be posted to the SAS Gradebook after each lecture. If you believe there is a discrepancy, please notify Dr. Ackroff by [email](mailto:ackroff@rci.rutgers.edu) as soon as possible. As with CPE, if you wait until the end of the course to try to address a problem from early in the course, there may not be enough time to investigate the problem and resolve it.

There will be at least 110 possible Clicker points during the course. A maximum of 90 of these Clicker points will count toward your grade. This being the case, there are no "make ups" for Clicker points. Since there are more points available than can count toward your grade, if you forget your clicker, miss class once or twice because you are ill, or your batteries die during class, you will still have ample opportunity to achieve the maximum number of points for your grade.

Since these points count toward your grade, clicker questions are considered to be the same as an academic exercise like an exam in class, and the standard rules governing academic integrity apply. Clicking for a friend who is not in class, for whatever reason, will be considered the same as cheating on an exam. At a minimum, you will **each** lose **all** your Clicker points **for the entire course**. Other disciplinary actions may be taken.

- **Final grades:** Grading in this course works differently from most other courses. Your grade will be determined by the total number of points achieved on exams, CPE, Online Exams, and Clicker Points. However, do not think that achieving 90% of the total possible points guarantees you an A. In most courses, you are exposed to an overview of various aspects of a discipline; there is no way you can learn everything about the topic. In this course, we cover completely everything you are expected to know. The course is designed to present the material several times in different ways, so it is entirely possible for you to know everything we have presented.

As you can see, there are numerous opportunities to earn large numbers of points, and some of them are "gimmies" -- there is no good reason not to earn the maximum number of CPE and Online Exam points, and you should also score highly on the Clicker points. So earning 90% does not necessarily represent the comprehension associated with an A grade.

At the end of the semester, points for all assignments are totaled for each student. An absolute frequency distribution (see Chapter 2 in your text) is made for all students. Typically, scores cluster, and there are natural "cut points" in the distribution. The top 20% or so of the students usually do *very* well on everything, and receive an A in the course. The next 25% or so do *pretty* well on everything (or very well on some things and not so well on others), and receive B or B+ for their grade. The next 40% or so do OK, and earn C or C+ grades. The bottom 10 or 15% receive D or F grades.

There are two factors that influence where we draw the cutoff points. As stated above, there are usually natural breaks in the distribution, and we use those as the initial cut points. The second factor is your instructor's impression of how well you learned the material. The reason for the "or so" in the description of the grade distribution is that if your instructor thinks that more students than usual have a really good grasp of the material, there will be more A grades than usual; if your instructor thinks that half the class "phoned in" their work, the distribution is not likely to be as generous.

Attendance and Correspondence Policies:

- **Attendance:** You should attend all meetings of all of your classes. My lectures are based on the material in the assigned readings, but may also cover material not discussed in the readings. You are responsible for all of this material.

If you arrive late or must leave before class is over, please sit near a door and try to be as inconspicuous as possible. It is distracting to everyone to have people walking in and out of the classroom during class.

Classes are held according to the schedule below as long as the University is open. If the weather appears to be threatening, you can check the [Campus Operating Status](#) here.

- **Classroom Etiquette:** Please turn off all cell phones, etc., before class begins.

If you wish to use a laptop computer to take notes, that is fine. Note, however, that you will not be able to use these notes during the open book computational exams; make sure to print out copies before the exam and bring them with you. If you wish to use a laptop computer to surf the web, play games, IM your friends, etc., I would suggest you go to the nearest Student Center. This advice also applies to having side discussions with your classmates, reading newspapers, doing puzzles, etc.

- **Questions:** I encourage you to ask questions during class. If something is unclear, or if you have a question related to the material being discussed, please ask your question then. Chances are that some of your classmates would also like some additional discussion of the topic.

Because of schedule-related issues, I prefer not to answer questions before or after class.

- **Email:** I try to answer email promptly. Having said that,
 - Please use a Subject that gives me some idea what you are writing about. This is especially important if you send mail from an account other than eden. Mail from sexgoddess@aol.com with a subject of "hello" is likely to be considered spam and deleted unread.
 - If you ask me a question whose answer is on the course web page or Syllabus, my reply is likely to say that.
 - If you ask me a question about your standing in the course, please include your name and which course and section you are enrolled in.
 - Please re-read the section on "Questions" above. I realize that there are times when you are reviewing notes after class and/or before an exam when you will discover that you have a question. But it is in everyone's best interest for you to ask your questions in class, rather than after the fact, if you have a question while class is in session.
 - As stated on the course web page, you are responsible for any announcements, etc., I send to the class via email. Emails are sent to the address that appears when your name is entered into "Search People" on the "Search Rutgers" page. There is a link on the course web page that allows you to update this address.

Schedule

Date	Lecture	Due	Assignment for next class
Tuesday, June 1	Overview and Course Mechanics; Review of basic concepts, confidence intervals, hypothesis testing, correlation and regression.		Read Chapter 9.
Thursday, June 3	One-way independent groups ANOVA 1		Review Chapter 10.
Tuesday, June 8	One-way independent groups ANOVA 2 and Factorial ANOVA 1		Review Chapter 10.
Thursday, June 10	Factorial ANOVA 2	Chapter 9 CPE.	Read Chapter 11 from 11.6 through the end of the chapter.
Tuesday, June 15	Dunnett's t and Tukey's HSD	Chapter 10 CPE.	Read Chapters 13 and 14.
Thursday, June 17	Statistical assumptions, ordinal data, nominal data, and F_{MAX} and Chi Square	CPE 11.3 - 11.7	
Tuesday, June 22	Review	CPE Chapters 13 and 14.	
Thursday, June 24	Exam	SEC 117	

Online Exam Schedule

Chapter	Available Online
9	June 8 - June 17
10	June 8 - June 17