COURSE DESCRIPTION

In this course students will master the basic principles of descriptive and inferential statistics and develop a level of “numeracy” necessary for understanding basic research findings. These tasks will serve you well in your capstone and in future positions. Topics include: hypothesis testing and point estimation; bivariate and multivariate measures of association; inferential statistics; basic understanding of ordinary least squares and logistic regression analyses. Students will access datasets through Blackboard and analyze these data using SPSS software.

COURSE INFORMATION

Prerequisites – Students should be proficient with the material covered in CRJU5003 (Graduate Research Methods), including working knowledge of SPSS basics. Students who did not receive undergraduate level statistics training are responsible for making themselves ready for this course. Also see the Appendices of the Gravetter and Wallnau text for some basics. Appendix A covers basic mathematics. Appendix D offers general instructions for using SPSS. There is also a tutorial on SPSS you should familiarize yourself with. The internet is also a treasure trove of SPSS information.

Please note that this is a demanding course: You will need to have at least 15 hours each week (outside of class time) to devote to this class or you can expect to do poorly and fail. Keeping up is important. It is entirely a “do-able” course, but you will have to be committed to it.

Required Texts and Materials -

1. Statistical for the Behavioral Sciences (9th Edition) by Gravetter and Wallnau. Wadsworth/Cengage. This hardback book is bundled with the code you need to access Aplia. This option will cost you approximately $170 to $180.

OR

1. The e-book version of Statistical for the Behavioral Sciences (9th Edition) by Gravetter and Wallnau. Wadsworth/Cengage. This e-book automatically comes with access to Aplia. This version will cost you approximately $140 to $150. Please note that book publishers in essence “rent” ebooks to you. After some period of time, they are no longer available.

2. A method to calculate square roots, natural logs (ln), and exponentials (e^x). This can be a calculator, excel software on your computer or a cell phone – whatever you have that you can use when doing this work.
Also optional is a basic text on the use of SPSS. My recommendation is Holcomb’s *SPSS Basics: Techniques for a First Course in Statistics* (see: http://www.pyrczak.com/titles/browseall/basics.htm).

**Required Software – Aplia.** (1) This comes bundled with the text. See above. (2) Student version of SPSS. Any version will do. If you want to purchase your own version, it is available for about $200 online. Or, some online stores lease it for 6 months for about $46. For example: http://e5.onthehub.com/WebStore/ProductSearchOfferingList.aspx?ws=49c547ba-f56d-dd11-bb6c-0030485a6b08&vsro=8&srch=spss. (I recommend the IBM® SPSS® Statistics 20. Feel free to shop around for better prices)

Your work in this class will require you to use SPSS software. If you want to purchase your own version, it is available for about $200 online (though I hear getting it can be tedious). Or some online stores lease it for 6 months for less.

Another possibility exists. It is my understanding that Bruce Fast at CU OIT site licensing can gain inexpensive licenses for students (60$-ish; maybe less). I have sent him a class list. From that, he will send via email instructions about how to pay for this license by check after the student emails him (sitelic@colorado.edu) -- from their ucdenver.edu address. The check would needs to be made out correctly as per http://sitelic.colorado.edu/checks/.

If you don’t wish to purchase it and/or do not have access at work or home, you can use the SPA lab computers at the university that have this software (Lawrence Street Building, suite 500). The lab is open 24 hours a day, 7 days a week. You will need to get authorization for after hours by going to the front desk in (again, suite 500) and obtaining the form from Gabrielle at the front desk. Once completed, she will process the form. Make sure to do this with plenty of time before you think you’ll need it, as the processing times for the forms vary.

Your login information for the lab computers is the same as the login to your student e-mail. PLEASE NOTE that the system sometimes does not synch right and UCD personnel have to ‘activate’ your account again. If a student does have problems they can ‘activate’ their account using this link:

https://web.ucdenver.edu/prfw/chpass.cgi?mode=ACT

If you have activation issues, you may also contact Rob Drouillard, our I.T. Coordinator in The School of Public Affairs at: Rob.Drouillard@ucdenver.edu, Office- 303-315-2211 or Cell- 303-249-6816. **Do not call him for issues on how to use the software.**
COURSE REQUIREMENTS

Grading - Your final grade is based on three components, each weighted equally in the class. First is weekly homework completed on Aplia. The second one-third of your grade comes from the midterm exam. And the remainder of your grade is based on your performance on the final exam.

- Homework Assignments (averaged) 33.333 pts.
- Midterm Exam 33.333 pts.
- Final Exam 33.333 pts.
- TOTAL 100.000 pts.

Homework Assignments – Students learn best by practice. To ensure this, you will do weekly homework on the chapters using Aplia software. When you purchase either the e-book, or the hardback+Aplia, you will have access to Aplia where you can do this homework.

You will also be given homework assignments in class during the semester which focus on using SPSS outside of class. While these will not be graded, it is strongly encouraged that you do this work to become proficient with the use of SPSS.

Exams – There is a midterm and final exam in this class. You are allowed to use your book and notes during the exams. Please don’t mistake this as meaning you can ‘figure it out’ during the exam. A full understanding of the material is still required to do well on the exams. Makeup exams are given in emergency situations and when I am contacted 2 weeks in advance of the scheduled exam. They will be given at my convenience and may necessitate that you take an incomplete in the course if the make-up is given past the grades deadline. Make up exams utilize different questions than in-class examinations.

Extra Credit - There is no “extra credit” in this graduate school class. Please don’t ask for any.

Course Grade Scale - I use the UCD 100 point grading scale in this course.

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<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>A</td>
<td>93+</td>
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<tr>
<td>B</td>
<td>90-92</td>
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<tr>
<td>C</td>
<td>87-89</td>
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<tr>
<td>D</td>
<td>77-79</td>
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<tr>
<td>F</td>
<td>59 or less</td>
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MISCELLANEOUS

Attendance – Unless you are one of those very rare students who learned more mathematics from books than from a professor (and I’ve not met one yet), it is extremely important that you attend every class meeting. Learning statistical techniques is a cumulative process. You can only comprehend later techniques if you understand previous topics.

I do not take attendance. If you do miss class you do not need to call me when you are not coming to class, nor do you need to bring me a doctor’s notes or other documentation to miss a regular (i.e., test day being a major exception) class. *Though I don’t take role, please note that missing class is not a good idea. It is clear that students who exhibit poor attendance do poorly at best.* Further, if you miss class, I cannot offer a one-on-one lecture to cover what you missed. Be sure to make a buddy who can fill you in on the missed material.
BlackBoard - If I have information to pass on to you (i.e., location of a particular article, change in class location, cancellation of class), I will inform you via email on BlackBoard. My Blackboard email is the same as the one listed above.

Contacting me - If you need to contact me, use the email provided above or email me via Canvas. I am more responsive through email than over the telephone.

Need Help? I have a research/teaching assistant assigned to me. If you need some assistance with the material or the weekly homework problems, contact Philip Waggoner first. If you are unable to get your problems solved with her, then and only then you may see me during my office hours.

Philip Waggoner
   Email: Philip.Waggoner@ucdenver.edu. He can also be reached via Canvas.
   Office hours: To be announced, or by appointment.
Please keep in mind that these hours are for the entire class, so Philip has the right to limit time with any individual student to make room for others if needed.

Dropping the Course - Please refer to University requirements regarding drop days and policies. If you are on the class roll at the end of the semester, you will be given a grade. This means that if you stop attending at week 3 (or any other week) and fail to drop the course yourself, you will be awarded the letter grade you earn at the end of the semester. You are responsible for dropping yourself.

Students with Disabilities - Students with disabilities who believe that they may need accommodations in this class are encouraged to contact the Disability Access Services Office as soon as possible to ensure that such accommodations are arranged in a timely fashion.

Academic Honesty - Cheating/Plagiarism is simply not tolerated. If you have questions about what cheating/plagiarism does and does not constitute, please see me and we can discuss it. It is better to ask and be certain than it is to suffer the severe consequences of this activity. Should an assignment be plagiarized, or a student be caught cheating, he/she will be awarded a zero for that assignment, and be referred to the appropriate University authorities.
OVERALL PHILOSOPHY

"Life is like a monkey, it just keeps flinging poo at you."

The trick is to keep going even when you've been hit.

I am a stickler regarding personal responsibility. I will not hound you for assignments, nor will I remind you of things for which you are responsible. I do not "give out" grades - you earn them. I don’t review for exams – that is what the entire semester is all about. This means that when a grade is earned by you, I will not change it.

Respect in Communication - An integral part of university education is the exchange of ideas and mutual respect. As educated critical thinkers and problem solvers, faculty, staff, and students are expected to treat each other with respect and dignity. This includes communication in person, but also communication using email, Blackboard and the phone. Disrespectful communication will not be tolerated. (See: http://en.wikipedia.org/wiki/Online_disinhibition_effect.)

SCHEDULE OF TOPICS

We begin our semester in Chapter 5 of the Gravetter and Wallnau text. (Again, be sure you are familiar with the material offered in Chapters 1-4). The dates below may be adjusted if deemed necessary by the Professor. You will be alerted to any changes in the schedule via email or announcement on Blackboard. The assigned reading and problems in each chapter for each date should be completed prior to class.

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Topics, Readings, Homework and Other Tasks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>1/21</td>
<td>Overview of Course Requirements</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pre-Test (Document)</td>
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<tr>
<td></td>
<td></td>
<td>VERY basic overview of Chapters 1-4</td>
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<td></td>
<td></td>
<td>Pointing out: Chapter 19 – Choosing the Right Statistics</td>
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<td>2.</td>
<td>1/28</td>
<td>Chapter 5 - G&amp;W - Z-scores: Location of Scores and Standardized Distributions</td>
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<td>Chapter 6 - G&amp;W - Probability</td>
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Before arriving to class you should have done the following:
1. Learn to use Aplia
2. Reading and homework on Aplia, Chapters 1-4 if you need a refresher (not used
in the computation of your course grade.

3. Read Chapters 5 & 6
4. Homework on Aplia for Chapters 5 & 6

3. 2/4 Chapter 7 - G&W - Probability and Samples: The Distribution of Sample Means
    Chapter 8 - G&W - Introduction to Hypothesis Testing

Before arriving to class you should have done the following:
1. Read Chapters 7 & 8
2. Homework on Aplia for Chapters 7 & 8

4. 2/11 Chapter 9 - G&W - Introduction to the t Statistic

Before arriving to class you should have done the following:
1. Read Chapter 9
2. Homework on Aplia for Chapter 9

5. 2/18 No class – conference week

6. 2/25 Chapter 10 – G&W - The t Test for Two Independent Samples
    Chapter 11 - G&W - The t Test for Two Related Samples
    Remember: Chapter 19 – Choosing the Right Statistics

Before arriving to class you should have done the following:
1. Read Chapters 10 & 11
2. Homework on Aplia for Chapters 10 & 11

7. 3/4 Midterm Exam (1/3 of your final grade).

8. 3/11 Chapter 12 - G&W - Introduction to Analysis of Variance

Before arriving to class you should have done the following:
1. Read Chapter 12
2. Homework on Aplia for Chapter 12

9. 3/18 Chapter 13 - G&W - Repeated-Measures Analysis of Variance
    Chapter 14 - G&W - Two-Factor Analysis of Variance (Independent Measures)

Before arriving to class you should have done the following:
1. Read Chapters 13 & 14
2. Homework on Aplia for Chapters 13 & 14

10. 3/25 No Class (Spring Break)

11. 4/1 Chapter 15 - G&W – Correlation
    crime: Assessing the empirical validity of classic and contemporary anomie
    theories”. Criminology. 45 (3) pp 617-663. (Available on Canvas.)
Before arriving to class you should have done the following:
1. Read Chapter 15
2. Read Baumer & Gustafson (focus on understanding and interpreting the correlation matrix. This will require knowledge on variables and measurement found in the article.
3. Homework on Aplia for Chapter 15

12. 4/8 Dummy variables and interaction effects (no reading available).
Chapter 16 - G&W - Introduction to Regression

**Handouts given out or posted on next week’s topic: Logistic Regression**

Before arriving to class you should have done the following:
1. Read Chapter 16
2. Read Baumer & Gustafson (focus on understanding and interpreting the findings related to dummy variables and interaction effects. This will require knowledge on variables and measurement found in the article.
3. Homework on Aplia for Chapter 16

13. 4/15 Logistic Regression

Before arriving to class you should have done the following:
1. Read the logistic regression handout
2. Read Lauritsen & Schaum (focus on understanding and interpreting the logistic regression findings. This will require knowledge on variables

14. 4/22 Chapter 17 - The Chi-Square Statistic: Tests for Goodness of Fit and Independence

Before arriving to class you should have done the following:
1. Read Chapter 17
2. Homework on Aplia for Chapter 17

15. 4/29 Chapter 18 – The Binomial Test
Remember: Chapter 19 – Choosing the Right Statistics
Post-Test (Document)

Before arriving to class you should have done the following:
1. Read Chapter 18
2. Homework on Aplia for Chapter 18

16. 5/6 Exam Two (1/3 of your final course grade).
Last Day of Class