

**EPY8214-01/02: Advanced Educational and Psychological Statistics**  
**Fall 2015 • M/W6:00-8:50pm • Allen 265/246 • Credit Hours: 4**

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### Course Description and Objectives

#### Prerequisite

EPY 4214/6214 or its equivalent

#### Purpose

This is an advanced statistics course meant to further familiarize students with techniques used for hypothesis testing. Students will learn to determine appropriate analyses and further develop their skills in interpretation of data.

#### Learning Outcomes

- A. Given a set of data in raw or summary form, the student will:
- Write suitable hypotheses for testing;
  - Identify and test assumptions necessary to the use of statistical methods;
  - Analyze the data to test pertinent hypotheses;
  - State results and conclusions of hypothesis tests.
- B. Given a description of a study or a set of results and conclusions, the student will:
- Judge the appropriateness of the selected procedures;
  - Judge the appropriateness of the conclusions;
  - Explain alternative approaches that would be more suitable for the given study than those described.

#### Required Textbook and Other Instructional Resources

- Field, A. (2013). *Discovering statistics using SPSS* (4<sup>th</sup> ed.). Thousand Oaks, CA: Sage.  
(Textbook companion website: <http://www.sagepub.com/field4e/main.htm>)
- SPSS (see “Laboratory and Computer Use” below for details)

#### Laboratory and Computer Use

This course includes a laboratory session, which is used for review and discussion of problems of computation, concepts, and computer use.

SPSS is a powerful statistical package students need to get acquainted with during the semester, which is available for your use in the lab. In addition, MSU has a site license that allows for SPSS to be installed for students’ home use on personal equipment at no cost. To install the package, go to <http://www.its.msstate.edu/software/downloads> and follow the instructions.

## Course Evaluation

### Course Letter Grade

Chapter Assignments	50	89.5-100 = A
Midterm Exam	15	79.5-89.4 = B
Final Exam	15	69.5-79.4 = C
Final Paper	20	59.5-69.4 = D
(Class Participation)	5	59.4 or below = F
<b>Total</b>	<b>105</b>	

### Reading Assignments

In order to be prepared to participate in class activities, students are expected to complete all readings and assignments outlined on the attached class schedule (see pg. 4 of this syllabus) prior to coming to class or accessing any class materials (e.g., lectures, chapter assignments) on *myCourses*. For some lectures, the instructor may assign supplemental readings, and students are expected to complete the supplemental readings as well.

### Lecture Assignments

Most lectures will be followed by one or more assignments from the back of the chapter(s) (“Smart Alex’s tasks”). While studying together is fine and encouraged, you are expected to complete all homework tasks independently. See *myCourses* for more detailed descriptions and requirements.

For every calendar day an initial assignment is posted late, 20% of the maximum obtainable points will be deducted.

### Exams

There will be one midterm exam and one final exam. **No make-up exam will be given.**

### Final Paper

Each student will select a research or data analysis project requiring some design(s) covered as part of the course, obtain the data, analyze the data, and present the findings (written up in APA style). You can earn a maximum of 20 points from your write-up. Projects turned in late lose points at the rate of 5 per calendar day, but none will be accepted after grades are submitted for the course. See *myCourses* for more detailed descriptions and requirements.

### Participation/Discussion Board Contribution

An attendance record will be kept for both lecture and lab sessions. A student is counted as absent if not in class when role is taken. Students are responsible for obtaining class notes and handouts for any classes or labs they miss.

Students are expected to keep up with the assigned work and participate as a member of the class and labs. Up to 5 points may be earned for participation (see “Course Letter Grade” above). These are not automatically awarded; attendance alone does not earn participation points, while absence without excusable reasons will likely jeopardize the points. Answering questions in class and lab, contributing to group exercises in class and lab, and asking appropriate questions are the principal elements of participation given consideration by the instructor.

In addition, you are expected to be respectful of your classmates, the teaching assistant, and the instructor. Note that the instructor adheres to the following principle in addressing disrespectful or harmful acts:

Someone said: “What do you think of the saying: ‘Repay harm with virtue’?” Confucius replied, “Then how will you repay virtue? **Repay harm with Justice** and repay virtue with virtue.” (*The Analects*, 14:36)

### Other Class Policies

#### Students with a Disabling Condition

Any student who, because of a disability, may require special arrangements in order to meet course requirements should contact the instructor as soon as possible to make any necessary arrangements. Students should present appropriate verification (from Disability Support Services). For additional information, you may contact the Disability Support Services office at 01 Montgomery Hall or (662) 325-3335.

#### Academic Integrity

Mississippi State has an approved Honor Code that applies to all students. The code is as follows: “As a Mississippi State University student, I will conduct myself with honor and integrity at all times. I will not lie, cheat, or steal, nor will I accept the actions of those who do.” Upon accepting admission to Mississippi State University, a student immediately assumes a commitment to uphold the Honor Code, to accept responsibility for learning, and to follow the philosophy and rules of the Honor Code. Student will be required to state their commitment on examinations, research papers, and other academic work. Ignorance of the rules does not exclude any member of the MSU community from the requirements or the processes of the Honor Code.

**Unless otherwise explicitly stated, the policy of this course is that all graded work should be done independently. All work should be completed WITHOUT conferring with other people (other students, friends, etc.). Any violation of this academic integrity policy will result in a 0 for the work and a letter sent to the Student Honor Code Office. For additional information regarding the honor code reporting process, go to <http://www.honorcode.msstate.edu/>.**

#### Title IX

MSU is committed to complying with Title IX, a federal law that prohibits discrimination, including violence and harassment, based on sex. This means that MSU’s educational programs and activities must be free from sex discrimination, sexual harassment, and other forms of sexual misconduct. If you or someone you know has experienced sex discrimination, sexual violence and/or harassment by any member of the University community, you are encouraged to report the conduct to MSU’s Director of Title IX/EEO Programs at 325-8124 or by e-mail to [titleix@msstate.edu](mailto:titleix@msstate.edu). Additional resources are available at <http://students.msstate.edu/sexualmisconduct/>.

### Class Schedule

Date	Topic	Readings	What's Due <sup>a</sup>
Introduction			
Aug 17	Introduction to the Course	Syllabus	
Aug 24/26	Prerequisite Review	Chs1-4, & 9	
Unit 1--ANOVA			
Aug 31/Sep 2	1. One-Way ANOVA (Independent Design)	Ch5; Ch11 (11.1 – 11.3, excl. 11.2.1); Eskine et al. (2011)	A1 due Sep 13
Sep 14/16	2. Follow-up Tests of ANOVA	Ch11 (11.4 – 11.12), excl. 11.6.5); Eskine et al. (2011)	A2 due Sep 20
Sep 21/23	3. One-Way ANOVA (Repeated Measures)	Ch14 (14.1 - 14.8); Mauss et al. (2007) Tangney et al. (1996)	A3 due Sep 27
Sep 28/30	4. Factorial ANOVA (Independent Design)	Ch13 (excl. 13.2.2); Aarts et al. (2010) Eskine et al. (2011)	A4 due Oct 11
Oct 12/14	5. Factorial ANOVA (Repeated Measures)	Ch14 (14.9 - 14.17) Mikel et al. (2011)	A5 due Oct 18
Oct 19/21	6. Mixed ANOVA	Ch15; Isaacowitz et al. (2006)	A6 due Oct 25
Oct 26	<b>Midterm Exam</b>		
Unit 2--Regression			
Nov 2/4	7. Regression 1—Bivariate Regression	Ch7 (7.1-7.4); Ch8 (8.1-8.4); Quoidbach et al. (2010)	A7 due Nov 8
Nov 9/11	8. Regression 2—Multiple Regression	Ch7 (7.5-7.10); Ch8 (8.5-8.14); Winkielman et al. (2005)	A8 due Nov 15
Nov 16/18	9. Regression 3—ANOVA as GLM; 10. ANCOVA as GLM	Chs11 (11.2.1) & 13 (13.2.2); Ch12	A9 & A10 due Nov 22
Nov 23	Student Presentations		
Nov 30	Student Presentations		
Dec 7	<b>Final Exam; Final Paper due</b>		

*Note:* The instructor reserves the right to adjust the schedule upon notifying students.

<sup>a</sup>“A#” refers to the Assignment for Lecture #; an assignments must be received via myCourses by 11:59pm of the due date.