Psychology 438/538

Advanced Behavioral Statistics

Spring 2014

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Office Hours:

Monday 11-12

Tuesday 10-11

Wednesday 11-12 & 2-3

Thursday 1-2

Class Time: online

Credit Hours: 3

Course Description

Computational and graphical techniques in descriptive and inferential data analysis. Primary topics include the scales of measurement, shapes and types of distributions, measures of central tendency and variability, correlation, regression, hypothesis testing; analysis of variance, interval estimation, sampling, and probability theory. Course will also include an introduction to statistical software and multivariate methods. Prerequisite: PSYC 238.

Course Materials

Please see Explanation of Course Materials (Announcement) for access directions

Online Textbook is included with site access

https://login.cengagebrain.com/cb/login.htm

Course Requirements

1. Timely participation in exams, assignments, & activities
2. Successful acquisition of knowledge related to data analysis and interpretation as evidenced by assignments, labs and quizzes

Learning Outcomes

Required Text(s):
Student Learning Outcomes:
The specific learning outcomes for the student are:

1. to understand what statistics are and how they are used.

2. to be able to choose the appropriate statistic(s) to use in a given situation

3. to understand conceptually what statistics mean and what they can tell use

4. to be able to use statistical software for the computation of both descriptive and inferential statistics

5. to understand the process of hypothesis testing

6. to be able to write up conclusions in "real English" based on the printouts from statistical software.

7. to apply critical thinking skills in terms of evaluating claims that are made around them in commercial and other environments

8. to communicate statistical results and will learn about the application of statistics in social contexts

In this class many of the ten learning goals and suggested outcomes from the American Psychological Association will be addressed. For many of you, this class will be a chance to demonstrate that you have achieved the following goals.

2.3 Evaluate the appropriateness of conclusions derived from psychological research.

a. Interpret basic statistical results

b. Distinguish between statistical significance and practical significance

c. Describe effect size and confidence intervals

d. Evaluate the validity of conclusions presented in research reports

6.2 Use appropriate software to produce understandable reports of the psychological literature, methods, and statistical and qualitative analyses in APA or other appropriate style, including graphic representations of data.

7.3 Exhibit quantitative literacy.

a. Apply basic mathematical concepts and operations to support measurement strategies

b. Use relevant probability and statistical analyses to facilitate interpretation of measurements

c. Articulate clear and appropriate rationale for choice of information conveyed in charts, tables, figures, and graphs

d. Interpret quantitative visual aids accurately, including showing vigilance about misuse or misrepresentation of quantitative information

Method(s) of Instruction:
Online Instruction and exercises

Classroom exercises from text and other sources (guided problem solving)

Discussions, critiques of research.

Analysis and evaluation of statistical data using statistical software.

Course Requirements:
In this class, you will need to attend class on a regular basis. For an online class, this means keeping up with all of the work, and getting online regularly to complete assignments. Statistics builds to a very large extent on the material that was covered in an earlier portion of the class, and non-participation will be problematic. Non-participation for any extended period of time will result in the loss of at least one letter grade.
Class requirements include exams, quizzes (checkpoints) and assignments that include both conceptual questions and application questions.

Students will read about concepts and research in statistics.

Students will also be asked to demonstrate their understanding of text and online readings through exams, quizzes, assignments, and lab experiences.

Methods of Instruction

Online materials and exercises,
Exercises from text and other sources (guided problem solving)
Discussions, critiques of research.
Evaluation and presentation of output from statistical programs

Course Schedule

Please be sure to check the following tools for Announcements. For the most part, items will be due Sunday at midnight before the following week begins. (This will be different for larger assignments and for finals week

Each MONDAY you will receive a Checklist with the reading assignments, assignments and quizzes that are due that week. It will include the due dates and any other pertinent details. This list will post as an announcement and will be mailed to your @eagles.csc.edu account. Upon receipt you should look this list over and plan your studies and activities appropriately.

Week 2	**Review & Chapter 1 Introduction to Statistics.**	• Register for online materials • Familiarize yourself with the course • • Assignment
Week 3	**Frequency Distributions - Online Chapter Chapter 2** **Central Tendency - Online Chapter Chapter 3**	• Assignment

Week 4	**Variability - Online Chapter Chapter 4** **z-Scores: Location of Scores and Standardized Distributions - Online Chapter Chapter 5**	• Assignment • Exam 1
Week 5	**Probability - Online Chapter Chapter 6** **Probability and Samples: The Distribution of Sample Means - Online Chapter Chapter 7**	• Assignment
Week 6	**Introduction to Hypothesis Testing - Online Chapter Chapter 8** **Introduction to the t Statistics - Online Chapter Chapter 9**	• Assignment
Week 7	**The t Test for Two Independent Samples - Online Chapter Chapter 10**	• Assignment
Week 8	**The t Test for Two Related Samples - Online Chapter Chapter 11**	• Assignment
Week 8	**Introduction to Analysis of Variance - Online Chapter Chapter 12**	• Assignment • Exam 2
Week 9	**Repeated-Measures Analysis of Variance (ANOVA) - Online Chapter Chapter 13**	• Assignment

Week 10	**Two-Factor Analysis of Variance (Independent Measures) - Online Chapter Chapter 14**	• Assignment
Week 11	**Correlation - Online Chapter Chapter 15**	• Assignment
Week 12	**Introduction to Regression - Online Chapter Chapter 16**	• • Assignment • Exam 3
Week 13	**The Chi-Square Statistic: Tests for Goodness of Fit and Independence - Online Chapter Chapter 17**	• Assignment
Week 14	**The Binomial Test - Online Chapter Chapter 18**	• Assignment
Week 15	**Choosing the Right Statistics - Online Chapter Chapter 19**	• Assignment
Week 16 Finals		FINAL EXAM

Grading Policy

Your grade will be based on your total accumulation of points on papers, assignments, quizzes and exams.

A	90 - 100 percent
B	80 - 89 percent
C	70 - 79 percent
D	60 - 69 percent
F	less than 60 percent

Please note that late assignments or exams will be penalized, and missing assignments may result in additional point loss.

Course Policies and Procedures
Incomplete Policy:

It is expected that incomplete will occur under relatively extreme and rare circumstances that are addressed by university policies.

IMPORTANT INFORMATION

Student Behavior:

Academic Honesty – Students are expected to conduct themselves in conformity with the highest standards with regard to academic honesty. Violation of college, state, or federal standards with regard to plagiarism, cheating, or falsification of official records will not be tolerated. Students violating such standards will be subject to discipline, as per campus policies articulated in the Student Handbook. Please request a copy of the Student Handbook from the Dean of Students (Crites 6280).

Attendance Policy – The College assumes that students will seek to profit from the instructional program and will recognize the importance of attending every class meeting of courses for which credit is expected. Responsibility for notifying faculty of absences and for arranging potential make-up rests with the candidates)

Attendance is required. In an online class, this is interpreted as timely participation in assignments and discussions. Work that is late will incur late penalties

Civility – Civil behavior enhances the academic setting and is expected at all times. The academic environment welcomes a difference of opinion, discourse, and debate within a civil environment.

Nondiscrimination Policy/Equal Educational Opportunity Policy:

Chadron State College is committed to an affirmative action program to encourage admission of minority and female students and to provide procedures which will assure equal treatment of all students. The College is committed to creating an environment for all students that is consistent with nondiscriminatory policy. To that end, it is the policy of Chadron State College to administer its academic employment programs and related supporting services in a manner which does not discriminate on the basis of gender, race, color, national origin, age, religion, disability, or marital status. *Student requests for reasonable accommodations based upon documented disabilities should be presented within the first two weeks of the semester or within two weeks of the diagnosis, to the Disabilities Counselor (432-6461; CRITES 338).*

Diversity:

Chadron State College aspires to create a safe and diversity sensitive learning environment that respects the rights, dignity, and welfare of students, faculty, and staff. Diversity includes the fair representation of all groups of individuals, the inclusion of minority perspectives and voices, and appreciation of different cultural and socioeconomic group practices. We aspire to foster and maintain an atmosphere that is free from discrimination, harassment, exploitation, or intimidation. Courses will strive to provide opportunity for all students to discuss issues of diversity including, but not limited to, ethnicity, gender, disability, and sexual orientation.

Intellectual Real Estate / Copyright Notice:

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Use of Technology:

Students are encouraged to use the technical resources provided in Chadron State College facilities to support, enhance, and expand their learning activities. Chadron State College recognizes that learning is a unique human endeavor best achieved through the interactions of instructors and students. Technology is best used when it supports and enhances teacher - student as well as student - student interactions.

Disclaimer:

This syllabus and schedule are articulated as an expectation of class topics, learning activities, and expected student learning. However, the instructor reserves the right to make changes in this schedule that, within his/her professional judgment would result in enhanced or more effective learning on the part of the students.