

EDFN 501: EDUCATIONAL STATISTICS

Western Kentucky University

Winter Term, January 2019

(Jan 6 – Jan 24)

(CRN 12840)

General information

Instructor: Lester A. C. Archer, Ph.D.

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Course overview

Educational Statistics is an introductory graduate course in using quantitative methods for inquiry in the educational, behavioral, and social science research. The course is intended to provide you with a conceptual understanding of basic statistical concepts and procedures for quantitatively exploring and understanding data. Covered topics include: descriptive statistics, frequency distribution and graphing, correlation, simple regression, sampling and probability, and comparison of sample means (*t*-tests and ANOVA). You will be expected to learn **when, how and why** to use these various procedures. Through the use of statistical analysis software (e.g., Stata), emphasis will be put on doing and interpreting statistics rather than on memorizing formulas or performing manual calculations.

Course objectives

1. To understand the basic statistical concepts and techniques that enable you to become statistically literate so that you can evaluate the appropriateness of statistical methodology and results reported in research literature.
2. To choose appropriate statistical methods according to circumstances.
3. To plan and carry out basic statistical analyses using Stata.
4. To learn how to interpret and report statistical findings.
5. To foster an appreciation and understanding of general procedures for testing research hypotheses.

Course Website

All materials, information, online assessments, and assignments for the course will be available through Blackboard.

Required Textbooks

Field, A. (2016). *An Adventure in Statistics: The Reality Enigma*. Los Angeles: SAGE. ISBN: 1446210456

Acock, A. C. (2016 or 2018). *A Gentle Introduction to Stata* (5th or 6th edition). College Station, Texas: Stata Press. ISBN: 1597181854 (5th edition) or 1597182699 (6th edition). The sixth edition is most affordably [purchased here](#). However, you may find a more affordable used version of the 5th edition on amazon or other internet bookstore.

Required Software

You should have a copy of Stata on your computer. I recommend you purchase the Stata/IC Annual license or the Stata/IC perpetual license. The perpetual license will allow you to have Stata forever to use in any future coursework or projects. [Purchase Stata here](#).

Course Activities

There will be four main types of course activities in each of the eight units of the course: Readings and audio or video segments with quizzes, the study journal, discussions with the professor, and projects.

PLAN / PACE TO READ ONE or MORE CHAPTERS PER DAY

Units of Study

Due January 10,

- Unit 1: Field Prologue and Chapters 1-2
- Unit 2: Field Chapters 3-5

Due January 15,

- Unit 3: Field Chapters 6-7
- Unit 4: Field Chapters 8-9

Due January 19

- Unit 5: Field Chapters 10-11
- Unit 6: Field Chapters 12-13

Due January 24

- Unit 7: Field Chapters 14-15
- Unit 8: Field Chapter 16

Study Journal

The study journals are traditional homework assignments based on the text. These assignments are worth 10 points each. The rubric is given below:

Study Journal Grading Rubric:

| Criterion | Points |
|---|-------------|
| Accuracy: All work in journal is accurate. | 0-10 points |
| Substance: Journal entries are meaningful and thoroughly respond to the questions. | 0-10 points |
| Completeness: Each journal entry fully answers the question asked. | 0-10 points |
| Expression: Writing is clear, well-organized, and free from grammar or spelling errors. | 0-10 points |
| Focused: Entries are focused on the topic presented, reflect attention to the readings, and demonstrate thoughtful engagement with the question. | 0-10 points |

Quizzes

Blackboard quizzes will be given each unit and will be based on readings, audios, and videos. The purpose of these quizzes are to motivate careful reading, listening, and viewing. Each quiz will be worth ten points and will be graded by Blackboard. You will have TWO opportunities to take each quiz.

Projects

Application assignments are projects that you will type up and turn in to me through Blackboard. These projects will include computer analyses and essay questions. I will hand grade these assignments and give you feedback.

Grading

Grades will be based on a weighting of the study journal, the WebAssign homework, and the projects as follows. All grades will be recorded in WebAssign and uploaded to Blackboard approximately every two weeks:

| | |
|---------------------|---------------|
| Quizzes (8) | 80 |
| Discussions (4) | 40 (optional) |
| Study Journals (8): | 80 |
| Projects (4): | 200 |
| Total: | 360 |

The total weighted percentage will be used to assign final grades as follows:

| | |
|---------------|---|
| 90 – 100 | A |
| 80 – 89.9 | B |
| 70 – 79.9 | C |
| 60 – 69.9 | D |
| 59.9 or below | F |

Plagiarism (Important)

It is expected that each student will do his/her own work. Academic dishonesty, including any form of plagiarism or cheating will not be tolerated. Be advised that student work may be checked using plagiarism detecting software. Our department (EALR) requires the following: Before receiving a grade in this course students will be REQUIRED to verify in writing (send me an email certifying compliance) that they have completed the Harvard Graduate School of Education online tutorial: Principles of Paraphrasing: Indiana University's Plagiarism and Academic Integrity tutorial: [Indiana Plagiarism Tutorial](#)

Student Policies:

The following sections are taken from the 15th Edition of WKU's Faculty Handbook:

Plagiarism:

To represent ideas or interpretations taken from another source as one's own is plagiarism. Plagiarism is a serious offense. The academic work of a student must be his or her own. One must give the author(s) credit for any source material used. To lift content directly from a source without giving credit is a flagrant act. To present a borrowed passage after having changed a few words, even if the source is referenced, is also plagiarism.

Cheating:

No student shall receive or give assistance not authorized by the instructor in taking an examination or in the preparation of an essay, laboratory report, problem assignment, or other project, which is submitted for purposes of grade determination.

Disposition of Offenses:

Students who commit any act of academic dishonesty may receive from the instructor a failing grade in that portion of the course work in which the act is detected or a failing grade in the course without possibility of withdrawal. The faculty member may also present the case to the University Disciplinary Committee through the Office of the Dean of Student Life for disciplinary sanctions. A student who believes a faculty member has dealt unfairly with him/her in a course involving academic dishonesty may seek relief through the Student Complaint Procedure.

Other Types of Academic Dishonesty:

Other types of academic offenses, such as the theft or sale of tests, should be reported to the Office of the Dean of Student Life for disciplinary action.

Accommodation of Disabilities:

Students with disabilities who require accommodations (academic adjustments and/or auxiliary aids or services) for this course must contact the Office for Student Disability Services, Room 445, Potter Hall. The OFSDS telephone number is (270) 745-5004 V/TDD. Please DO NOT request accommodations directly from the professor or instructor without a letter of accommodation from the Office for Student Disability Services.

Affirmative Action:

Western Kentucky University does not discriminate on the basis of race, sex, religion, color, national or ethnic origin, age, disability, sexual orientation or military service. Inquiries or comments regarding these issues should be directed to the Director of Equal Opportunity/504/ADA Compliance, Western Kentucky University, 1906 College Heights Blvd., Bowling Green, KY 42101, Telephone (270) 745-5121, TTY (270) 745-3030.

Extra Help:

The instructor will be available as need is indicated. Students are encouraged to discuss any questions or problems with the instructor.

Course Adjustments:

The instructor reserves the right to modify the course requirements, schedule, and syllabus. The syllabus and schedule for this course are subject to change in the event of extenuating circumstances. No change will occur, however, *unless* proper and prior notice is given to students.

Date Prepared and by Whom:

Course syllabus prepared December 13, 2019 by Lester A. C. Archer