



**EDUR 8132 Educational Statistics II**  
**Spring 2024**  
**Bryan W. Griffin**

## **Office Information**

### **Contact Hours**

Varies for on-line courses, therefore it is best to contact me electronically to arrange an appointment.

### **E-Mail**

Use Folio mail to contact me. If Folio is not working, my regular e-mail address is [bwgriffin@GeorgiaSouthern.edu](mailto:bwgriffin@GeorgiaSouthern.edu), but please use Folio for course-related communications.

### **Mail**

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## **Catalogue Description of EDUR 8132**

This is an advanced statistics in education course that extends knowledge of educational research situations and statistical procedures beyond EDUR 8131. Emphasis is placed on more complex analysis of variance procedures and multiple regression analysis as applicable to current educational research problems.  
Prerequisite: EDUR 8131 or equivalent.

### **Course Text (not required but recommended)**

To help save on costs, I use an older textbook that can be easily found. Newer statistics textbooks offer little, or nothing, more than older texts, so newer texts are not worth the \$100+ price. Often my notes and videos are sufficient to cover topics, but with statistics reading additional sources can help learning, therefore I recommend everyone purchase, and read, either the 3<sup>rd</sup> or 4<sup>th</sup> edition of the text listed below.

Agresti, A. & Finlay, B. (2009). Statistical methods for the social sciences (4th ed.). Pearson/Prentice Hall.  
ISBN 10: 0130272957, ISBN 13: 9780130272959

- Used price under \$20 shipped
- <http://www.biblio.com/9780130272959>
- <https://www.abebooks.com/book-search/isbn/9780130272959>

or

Agresti, A. & Finlay, B. (1996). Statistical methods for the social sciences (3rd ed.). Pearson/Prentice Hall.  
ISBN 10: 0136225152, ISBN 13: 9780136225157

- Used price under \$10 shipped
- <http://www.biblio.com/9780135265260>
- <https://www.abebooks.com/book-search/isbn/0135265266>

Agresti's page, with links book data files, can be found here: <http://www.stat.ufl.edu/~aa/>  
Agresti's statistics 2 course: <http://www.stat.ufl.edu/~aa/sta6127/index.html>

## Course Web Site

The course web site contains detailed topic notes, activities, supplemental reading, video and static tutorials, example statistical presentations, and course announcements. The site may be found at the following address (select the relevant semester link):

<http://www.bwgriffin.com/gsu/courses/edur8132/>

## Software

Two options, SPSS (rent for about \$45) or JASP (free). SPSS has been used at Georgia Southern for decades and is the version I use in instructional videos. JASP is relatively new and I will add supplemental videos showing how to use it in this course. Select whichever option seems best for you. I do recommend JASP since it is powerful, fast, and easy to use. JASP's primary limitation is the lack of a data editor/spreadsheet like SPSS which requires one to use a spreadsheet (e.g. Google sheet or Excel) for data manipulation and entry.

Please note that **we will use JASP exclusively** when we learn structural equation modeling since SPSS does not offer that analysis option with the inexpensive student version.

### (a) SPSS Version 10.0 or higher

The latest version IBM/SPSS Statistics Base for Windows can be rented for 6 months for about \$35 from this site (cost is higher for MAC version).

<http://www.onthehub.com/spss>

Other sources to rent SPSS may be found linked below.

<https://www.ibm.com/products/spss-statistics-gradpack>

Many students who purchase MAC versions of SPSS have complained of installation and run issues. I recommend buying only the Windows version and using a Windows computer for data analysis.

Buy the version highlighted in the screen capture below.

The screenshot shows a product listing for the "IBM® SPSS® Statistics Base GradPack". The listing includes the following details:

- Includes:** Statistics Base, Data Preparation, and Bootstrapping
- MSRP:** \$1,210.00
- Price:** \$34.90
- Savings:** You save \$1,175.10 (97%)
- Available to:** Students
- Link:** [New lower price!](#)
- Product ID:** IBM® SPSS® Statistics Base GradPack 28 for Windows and Mac (6-Months Rental)
- Add to Cart:** A blue button with a shopping cart icon and the text "Add to Cart".

### (b) JASP

JASP can be downloaded from this site.

<https://jasp-stats.org>

Versions are available for Windows, MAC, Linux, and browser online.

If you experience difficulties with installation, I cannot help. You may be able to identify solutions via online searches or JASP support page.

### **Course Content and Objectives**

Content Covered (see Course Index and Course Calendar on the course web site for assigned readings, supplemental readings, and date topics are covered: <http://www.bwgriffin.com/gsu/courses/edur8132>)

1. Introductory Review
  - a. Central Tendency
  - b. Variability
  - c. Correlation
  - d. t-tests
  - e. Hypothesis Testing
2. Regression Models
  - a. One Quantitative Predictor
  - b. Multiple Quantitative Predictors
  - c. Model fit; Semi-partial Correlation ( $\Delta R^2$ ); Effect Size
  - d. Standardized Regression Equation
  - e. One and Multiple Qualitative Predictors
  - f. Both Quantitative and Qualitative Predictors
  - g. Sample Size Determination
  - h. Reading and Interpreting Published Results
3. ANOVA Models
  - a. One-way ANOVA, Multiple Comparisons
  - b. Multi-way ANOVA without and with Interactions
  - c. Multiple Comparisons and Simple Main Effects in Multi-way ANOVA
  - d. ANCOVA with Multiple Groups
  - e. ANCOVA with Factor  $\times$  Covariate Interaction
  - f. Multiple Comparisons and Simple Main Effects in ANCOVA
  - g. Sample Size in ANOVA/ANCOVA
4. Structural Equation Modeling (SEM)
  - a. Model Specification (correlations, regression, path models, factor models, latent variable models)
  - b. Model Identification
  - c. Model Estimation
  - d. Model Evaluation and Re-specification

Following presentation of the above content, students should be able to analyze complex data using, as appropriate, various regression, ANOVA, SEM models; perform these analyses in relevant statistical software (e.g., JASP, SPSS); read and interpret results based upon these models; and produce APA (American Psychological Association) styled output with corresponding written inference and interpretation for written reports.

### **Course Calendar**

Given that the course calendar may change weekly subject to the pace of content coverage, the course calendar is not listed here, however a detailed and current calendar can be found at the Course Web Site, linked below:

<http://www.bwgriffin.com/gsu/courses/edur8132>

## **Content Delivery**

This course is taught by a combination of recorded instructional video presentations, content notes, chat notes, and other on-line content. Optional live chats may be offered for those interested. A forum discussion board will be used to enable questions and answer sessions, and to post announcements.

## **Grading, Assessments, and Course Activities**

There will be six grading opportunities during the term based upon three tests. For each test, there will be two versions, the original and an alternate. Everyone may complete both versions, or may complete only one version, the original or alternate. I recommend everyone complete the original test, then use the graded original and answer key as a study guide to complete the alternate version. This allows folks the possibility of increasing their test grade. The table below illustrates the grading opportunities.

Original Test	Alternate Test	Course Grade Determination
Test 1	Alternate Test 1	The higher score of Test 1 or Alt Test 1 will be used.
Test 2	Alternate Test 2	The higher score of Test 2 or Alt Test 2 will be used.
Test 3	Alternate Test 3	The higher score of Test 3 or Alt Test 3 will be used.

Each test will focus on conceptual components of statistical analysis, computer applications, choice of statistical procedures, and written results and interpretations. Tests will be posted early in the semester so plenty of time is available for completion.

Each test will be weighted equally at 1/3 of the final grade. Final course grades will be the mean score for Tests 1, 2, or 3 (or alternate test score if those are higher). Final grades will be assigned based on the following table.

90 and above	= A
80 to less than 89.999	= B
70 to less than 79.999	= C
60 to less than 69.999	= D
59.999 and below	= F

Should you not provide responses to a missed test before the end of the term, an IP (in progress) will be assigned as your final course grade and will remain until all missed tests are completed.

If you fail to complete Test 3 on the scheduled date, you may complete the alternate Test 3 during a time that is convenient for the instructor. Contact the instructor at the end of the semester to obtain alternate Test 3. Tests cannot be taken early.

In addition to the graded tests, other non-graded activities will be available. These activities include analysis of data and reporting of statistical results, numerous computer replications of examples from assigned readings and course notes, and out-of-class exercises. These activities are designed to facilitate learning of course content.

## **Attendance**

You may come and go as you please during class or chat sessions; attendance is not recorded or required in EDUR 8132 except for verification purposes at the outset of the semester.

## **Withdrawing from Class**

The university sets a specific date in which you may withdraw from a course without an academic penalty. On rare occasions students wish to withdraw after the university deadline. This may be possible -

contact the registrar's office to learn which forms are needed to petition for a withdraw after the university deadline has passed.

### **How This Course Supports the College's Conceptual Framework**

The College of Education's conceptual framework advances the theme of reflective educators for diverse learners. This includes, for example, commitments to technology and to knowledge and dispositions of the profession. In this course information will be learned that should make each student educator a more knowledgeable and critical consumer of educational research, thus enabling educators to evaluate better current and recommended practices when analyzed empirically. In addition, the statistical and data analytic skills presented in this course will enable student educators to become producers of educational research and this will enable educators to employ empirical means to study their own classroom and school practices through action research.

### **Academic Integrity Expectations**

Students are expected to abide by the GSU Student Conduct Code and Regulations regarding academic integrity. Academic misconduct such as cheating, collaborating on tests when prohibited, and plagiarism will be reported to the Office of Judicial Affairs and appropriate penalties imposed that could affect course grade, such as a grade of zero on the targeted activity or test. See GSU's *Student Conduct Code* for relevant details.

### **ADA Accommodations**

In compliance with the Americans with Disabilities Act (ADA), this course will honor requests for reasonable accommodations made by individuals with disabilities or demonstrating appropriate need for learning environment adjustments. Students must self-disclose their disability to the Student Accessibility Resource Center (SARC) before academic accommodations can be implemented. Students requesting alternative educational arrangements must submit a completed COVID-19 Alternative Educational Arrangement Request Form to [the SARC office](#). For additional information, please call the SARC office at (912) 478-1566 on the Statesboro campus, or at (912) 344-2572 on the Armstrong and Liberty campuses.

### **Artificial Intelligence Usage**

GSU stance on use of AI in courses: "I expect you to generate your own work in this class. Any work submitted infers the assertion that you have generated and written the text, unless stated otherwise by proper quotation and attribution methods. Submitting content that was generated by someone else, or that was created or assisted by a computer application or tool, including artificial intelligence (AI) tools such as ChatGPT, is cheating and constitutes a violation of the Student Conduct Code. You may use simple word processing tools to update grammar in your work, but you may not use AI tools to draft your assignments, even if you edit, revise, or paraphrase it. There may be opportunities for you to use AI tools in this class, but I will clearly specify when and in what capacity if the opportunity presents itself."