Division: Theoretical and Behavioral Foundations (TBF)

Program Area: Education Evaluation & Research

Course Title: **EER7650: “Computer Use in Research”**

CRN: #28004              Term/Year: Winter 2016

Course Location: 114.6 Education Building (Lab is located inside of 114)

Day: Wednesdays        Time: 4:30 pm – 7:15 pm

Instructor: Kevin Carroll

Office Address: 114.3 Education Building

Office Hours: Available by appointment. Please email or call.

Office Phone: 313-577-9935

E-mail: kcarroll@wayne.edu

Course Description: Introduction to computer use in educational research with emphasis on using the SPSS(Base) statistical package.

**Course Outcomes:**

The student will:

1. Effectively and efficiently use the SPSS/PC statistical package
2. Analyze data using selected SPSS procedures. Analyses will include, but not be limited to the following:
   (a) **Frequencies** (counting responses for one or more variables; summarize data)
   (b) **Crosstabs** (2-way to n-way cross tabulations with relevant statistics)
   (c) **Means** (providing means and standard deviations for subsets of a categorical variable)
   (d) **T-Test** (one sample, two sample, and correlated samples)
   (e) **ANOVA** (analysis of variance for a single independent variable; factorial analysis)
   (f) **NPar Tests** (selected nominal and ordinal non-parametric tests)
   (g) **Correlation** (Pearson product moment correlation coefficients with hypothesis testing)
   (h) **Regression** (simple, multiple, and logistic regression analysis)
3. Successfully complete 12 assigned statistical problems and answer questions related to the problems
4. Successfully complete 2 Review Problems as assigned
5. Participate in class discussions
**Required Text:**


**Related Journals:**

- [Applied Psychological Measurement](https://www.sagepub.com), SAGE Publications
- [Biometrics](https://onlinelibrary.wiley.com/journal/10.1111), Biometric Society (Alexandria, VA)
- [Biometrika](https://academic.oup.com), Oxford University Press in association with Biometrika Trust, Oxford, UK
- [Educational and Psychological Measurement](https://www.sagepub.com), Sage Publications (Thousand Oaks)
- [Journal of Educational and Behavioral Statistics](https://www.tandfonline.com), American Educational Research Association (Washington)
- [Journal of Modern Applied Statistical Methods](https://www.wase.org), College of Education, Wayne State University
- [Journal of Statistics Education](https://www.jse.com), Department of Statistics, North Carolina State University, Raleigh, NC.
- [Journal of the American Statistical Association](https://www.tandfonline.com), American Statistical Association (Alexandria, VA)
- [Psychometrika](https://www.springer.com), Psychometric Society, University of North Carolina at Greensboro, P. O. Box 26171 Greensboro, NC 27402-6171
- [Stats](https://www.tandfonline.com), The Magazine for Students of Statistics, American Statistical Association (Alexandria, VA)
- [The American Statistician](https://www.tandfonline.com), American Statistical Association (Alexandria, VA)
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<thead>
<tr>
<th>DATE</th>
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<td>1/13</td>
<td>Introduction to EER 7650. Discussion of assignments and grading</td>
<td>Introduction</td>
<td>Aldrich &amp; Cunningham (A&amp;C) Elliott &amp; Woodward (E&amp;W)</td>
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<tr>
<td>1/20</td>
<td>Introduction to SPSS for Windows</td>
<td>SPSS Tutorial</td>
<td>Chapter 1 (Both) Chapters 2 &amp; 7 (A&amp;C)</td>
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<td>1/27</td>
<td>Examining your data</td>
<td>Problem 1</td>
<td>Chapter 2 (E &amp; W) Chaps. 3, 5.1-5.3 (A&amp;C)</td>
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<td>2/3</td>
<td>Summarizing data for a single variable; scales of measurement; graphing</td>
<td>Problem 2</td>
<td>Chapter 3 (E &amp; W) Chaps. 4, 8, 9 (A&amp;C)</td>
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<td>2/10</td>
<td>Modification and recoding of data</td>
<td>Problem 3</td>
<td>Chapter 6 (A&amp;C)</td>
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<td>2/17</td>
<td>Analysis of means; central limit theorem; confidence intervals</td>
<td>Problem 4</td>
<td>Article assigned</td>
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<td>2/24</td>
<td>Comparison of means; hypothesis testing; one &amp; two sample designs</td>
<td>Problem 5</td>
<td>Chapter 4 (E&amp;W) Chapter 11 (A&amp;C)</td>
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<td>3/2</td>
<td>Chi-square analysis; analysis of relationships for nominal data</td>
<td>Problem 6</td>
<td>Chapter 6 (E&amp;W) Chaps. 24-25 (A&amp;C)</td>
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<td>Analysis of Variance One-Way</td>
<td>Problem 7</td>
<td>Chapter 15.1-15.4 (A&amp;C) Chapter 7 (E &amp; W)</td>
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<td>3/23</td>
<td>Analysis of Variance Two-Way</td>
<td>Problem 8, Review Problem 1 due</td>
<td>Chapter 7 (E &amp; W) Chapter 16 (A&amp;C)</td>
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<td>4/6</td>
<td>Linear Regression</td>
<td>Problem 10</td>
<td>Chapter 5 (E &amp; W) Chaps. 20-21 (A&amp;C)</td>
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For Problems 1 – 12 of the SPSS assignments you will be able to form groups to complete the assignments. The maximum number of students in a group is two.

For the Review Problems, students will work independently outside of class on the assignments.

It is the plan to upload data files to Blackboard for use with the assigned problems.

**Class Policy:**

The student is encouraged to attend all lectures in order to obtain a good understanding of the material. All communication to and from the instructor will be done in a courteous and professional manner. The student is encouraged to contact the instructor (preferably by telephone) if he or she is having any problems or issues. Finally, the instructor reserves the right to change the chapters to be covered in class and the method of student assessment; however, the student will be notified in advance of such changes.

**Attendance Policy:**

Understanding that some students may encounter a situation that might necessitate missing a class, students are permitted **one** absence from class before losing points from their grade. For each subsequent absence, students will lose **two** grade points.

Given weather conditions, some students might occasionally arrive late. Considering that possibility, students are permitted two late class arrivals before losing attendance points. For every subsequent late arrival, students will lose **one** point from their grade.

This policy is subject to modification should a student experience a life situation that warrants alteration of the policy, such as a severe illness, their own or that of an immediate family member, or death in the family. Should any such circumstance occur, request for modification of the attendance policy should be discussed with the instructor.

**Grading System:**

1. Twelve problems at 10 points each 120 points
2. Two Review Problems at 15 points each 30 points
3. Class participation 20 points

Total points = 170 points

**Grades:**

A = 100% – 93%
A- = 92% - 88%
B+ = 87% - 83%
B = 82% - 78%
B- = 77% - 73%
C+ = 72% - 68%
C = 67% - 63%
C- = 62% - 58%

**General Note on Grading**

The College of Education faculty members strive to implement assessment measures that reflect a variety of strategies in order to evaluate a student's performance in a course. For undergraduates and post-degree students C grades will be awarded for satisfactory work that satisfies all course requirements; B grades will be awarded for very good work, and A grades will be reserved for outstanding performance. [For graduate students B grades will be awarded for satisfactory work that satisfies all course requirements; B+ grades will be awarded for very good work, and A grades will be reserved for outstanding performance.] Please note that there is a distribution of grades from A-F within the College of Education and that plusses and minuses are recorded and distinguish distinct grade point averages. NOTE THAT LATE ASSIGNMENTS WILL RESULT IN A LOSS OF 1 POINT FOR THAT ASSIGNMENT.

**Academic Dishonesty/Plagiarism:**

The College of Education has a “zero tolerance” approach to plagiarism and other forms of academic dishonesty. (See Student Code of Conduct http://doso.wayne.edu/codeofconduct.pdf). Plagiarism includes copying material (any more than 5 consecutive words) from outside texts or presenting outside information as if it were your own by not crediting authors through citations. It can be deliberate or unintended. Specific examples of academic dishonesty, including what constitutes plagiarism, can be found in the University’s Undergraduate Bulletin (http://bulletins.wayne.edu/ubk-output/index.html), the Undergraduate Student Handbook (http://comm.wayne.edu/files/undergradhandbook.pdf) and in print and online versions of the Graduate Catalog (http://www.bulletins.wayne.edu/gbk-output/index.html) under the heading “Student Ethics.” It is every student’s responsibility to read these documents to be aware which actions are defined as plagiarism and academic dishonesty. Sanctions could include failure in the course involved, probation and expulsion, so students are advised to think carefully and thoroughly, ask for help from instructors if it is needed, and make smart decisions about their academic work.

**Enrollment/ Withdrawal Policy:**

Beginning in Fall 2011, students must add classes no later than the end of the first week of classes. This includes online classes. Students may continue to drop classes (with full tuition cancellation) through the first two weeks of the term.
Students who withdraw from a course after the end of the 4th week of class will receive a grade of WP, WF, or WN.

- WP will be awarded if the student is passing the course (based on work due to date) at the time the withdrawal is requested
- WF will be awarded if the student is failing the course (based on work due to date) at the time the withdrawal is requested
- WN will be awarded if no materials have been submitted, and so there is no basis for a grade

Students must submit their withdrawal request on-line through Pipeline. The faculty member must approve the withdrawal request before it becomes final, and students should continue to attend class until they receive notification via email that the withdrawal has been approved. Beginning in Fall 2011, the last day to withdraw will be at the end of the 10th full week of classes. The withdrawal date for courses longer or shorter than the full 15-week terms will be adjusted proportionately.

**Attention Students with Disabilities:**

If you have a documented disability that requires accommodations, you will need to register with Student Disability Services (SDS) for coordination of your academic accommodations. The Student Disability Services (SDS) office is located at 1600 David Adamany Undergraduate Library in the Student Academic Success Services department. SDS telephone number is 313-577-1851 or 313-202-4216 (video phone). Once you have your accommodations in place, I will be glad to meet with you privately during my office hours to discuss your special needs. Student Disability Services’ mission is to assist the university in creating an accessible community where students with disabilities have an equal opportunity to fully participate in their educational experience at Wayne State University.

Please be aware that a delay in getting SDS accommodation letters for the current semester may hinder the availability or facilitation of those accommodations in a timely manner. Therefore, it is in your best interest to get your accommodation letters as early in the semester as possible.

**Religious Observance Policy:**

Because of the extraordinary variety of religious affiliations represented in the University student body and staff, the Wayne State University calendar makes no provision for religious holidays. It is University policy, however, to respect the faith and religious obligations of the individual. Students who find that their classes or examinations involve conflicts with their religious observances are expected to notify their instructors well in advance so that alternative arrangements as suitable as possible may be worked out.