Course Title: EER 7650: Computer Use in Research  
Term/Year: Fall, 2017  
Course Location: 114.6 Education Building (Lab is located inside of 114)  
Day: Tuesday  
Time: 5:00 pm – 7:30 pm  
Instructor: Shlomo Sawilowsky  
Office Address: 371 Education  
Office Hours: Tuesday, 4:00 – 4:50 pm.  
Office Phone: 313-577-5244  
E-mail: shlomo@wayne.edu  
Secretary: Ms. Sheri Martini  
Office Phone: 313-577-1614  
Office 3rd Floor North EDUC

Course Description: Introduction to computer use in educational research with emphasis on using the SPSS ver. 24 (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 8 assigned SPSS problems  
(4) Successfully complete a Capstone Project

Texts:  
<table>
<thead>
<tr>
<th>Lecture</th>
<th>TOPIC</th>
<th>ASSIGNMENT</th>
<th>Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Sep 5</td>
<td>Introduction to EER 7650. Discussion of assignments and grading, Introduction to SPSS for Windows</td>
<td></td>
<td>Chapter 1 (Both) Chapters 2 &amp; 7 (A&amp;C)</td>
</tr>
<tr>
<td>2</td>
<td>Data entry and cleansing, preliminary examination of data</td>
<td></td>
<td>Chapter 2 (E &amp; W) Chaps. 3, 5.1-5.3 (A&amp;C)</td>
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<tr>
<td>3</td>
<td>Summarizing data for a single variable; scales of measurement; graphing</td>
<td></td>
<td>Chapter 3 (E &amp; W) Chaps. 4, 8, 9 (A&amp;C)</td>
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<td>4</td>
<td>Modification, recoding, selecting, weighting of data</td>
<td></td>
<td>Chapter 6 (A&amp;C)</td>
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<tr>
<td>5</td>
<td>Descriptive statistics (Central Tendency, Variability)</td>
<td>Problem 1 Due: SPSS</td>
<td>Chapter 5 (E &amp; W) Chapter 19.1-19.4 (A&amp;C)</td>
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<tr>
<td>6</td>
<td>Interpreting (parametric) correlations</td>
<td>Problem 2 Due: Descriptive Statistics</td>
<td>Chapter 4 (E&amp;W) Chapter 11 (A&amp;C)</td>
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<tr>
<td>7</td>
<td>Hypothesis testing, confidence intervals</td>
<td>Problem 3 Due: Correlations</td>
<td>Chapter 4 (E&amp;W) Chapter 11 (A&amp;C)</td>
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<tr>
<td>8</td>
<td>Chi-square analysis; analysis of relationships for nominal data</td>
<td>Problem 4 Due: Hypothesis tests &amp; confidence intervals</td>
<td>Chapter 6 (E&amp;W) Chaps. 24-25 (A&amp;C)</td>
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<td>9</td>
<td>Analysis of Variance One-Way</td>
<td>Problem 5 Due: Chi-Square analysis</td>
<td>Chapter 15.1-15.4 (A&amp;C) Chapter 7 (E &amp; W)</td>
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<td>10</td>
<td>Analysis of Variance Two-Way</td>
<td>Capstone Project topic approved by Instructor</td>
<td>Chapter 7 (E &amp; W) Chapter 16 (A&amp;C)</td>
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<tr>
<td>11</td>
<td>Linear/Logistic Regression</td>
<td>Problem 6 Due: ANOVA</td>
<td>Chapter 5, 9 (E &amp; W) Chaps. 20-21, 22 (A&amp;C)</td>
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<td>12</td>
<td>Non-Parametric Statistics: Correlations, Hypothesis Tests</td>
<td>Problem 7 Due: Regression</td>
<td>Chapter 8 (E &amp; W) Chaps. 13.5, 14.5, 15.5,</td>
</tr>
</tbody>
</table>
Data files pertaining to the Problems will be uploaded to Blackboard. For SPSS Problems 1 – 8 you are permitted to pair with one classmate to complete the assignments. List the name of both students on the submitted assignment, and a description of what work was performed by each student. You may work alone if you so desire.

Capstone Assignment. The student will select a topic and have it approved by the Instructor on the Class Schedule lecture/date indicated above. The student must obtain raw data (minimum two variables of 30 cases each) representing a real world problem, enter it into SPSS, determine a research and statistical hypothesis, and conduct appropriate SPSS analyses. The student must submit the (a) .sav, .spo, (and .sps if used) files electronically. A maximum five page report (MS Word document, double spaced with 1” margins all around, font size from 10 – 12 pt.) must also be submitted, with references and tables in proper APA format. The suggested space allocation for the report is:

- Introduction (1 page)
  - Overview (1 paragraph)
  - Data source, entry, cleansing (1 paragraph)
  - Research Problem (1 paragraph)
  - Statistical Hypothesis (1 paragraph)
  - SPSS Statistical procedures invoked (1 paragraph)

- Results (3 pages)

- Discussion (1 page)

Students MUST work independently, outside of class, on this assignment. Any assistance obtained on the Capstone Project from any source (e.g., assistance from others, other textbooks, internet, etc.) apart from class notes and the two required textbooks constitutes plagiarism. Violators of the WSU plagiarism policy will receive an “F” for the course, and a recommendation for expulsion from WSU.

NOTE:

1. TURN OFF CELL PHONES PRIOR TO CLASS. NO EXCEPTIONS!

Class Policies:

New Federal regulations require positive attendance the first two weeks of class, or at least formal communication with the instructor during that time period. Otherwise, per Federal and WSU policy, the student will be dropped from the class. After the first two weeks, the student is encouraged to attend all lectures in order to obtain a good understanding of the material. Given weather conditions late in the Fall term, please leave sufficiently early to arrive in a timely fashion so as not to disturb the instructor and classmates.
Chapter assignments may be changed, and notification will be given in class and on Blackboard, due to the pace of the class.

Grades:
1. Eight problems @ 10 points each: 80 points
2. Capstone Project: 20 points

\[
\begin{align*}
A &= 92 - 100 \\
A- &= 88 - 91 \\
B+ &= 84 - 87 \\
B &= 80 - 83 \\
B- &= 76 - 79 \\
C+ &= 73 - 75 \\
C &= 70 - 72 \\
F &= 0 - 69
\end{align*}
\]

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:
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.

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.