Division: Theoretical and Behavioral Foundations
Program Area: EER 8992  Section#: 001
Course Title: Research and Experimental Design
Term/Year: Winter, 2017
Course Location: 149 EDUC
Day & Time: Wednesday, 5:00 pm
Instructor: Professor Shlomo Sawilowsky
Office Address: 371 Education
Office Hours: Thursday, 3:50-4:50 pm, 371 EDUC
Office Phone #: 313.577.5244
EMAIL: professorshlomo@gmail.com

Course Description:
Design of empirical research for students possessing basic knowledge of statistics. Topics include hypothesis construction, sampling theory, experimental and quasi-experimental designs, selection of statistical procedures, and construction of data gathering instruments.

Course Outcomes: It is the purpose of this course to provide experiences that will enable the student to:

1. Discuss the scientific approach as applied in the behavioral sciences, as well as the differences, advantages, and limitations between the scientific method and other methods of knowing.
2. Recognize, define, and be familiar with the distinctions between a researchable problem, a problem statement, and a research hypothesis.
3. Define constructs, concept, and variables operationally and constitutively, define the dependent and independent variables, and determine the quantitative and/or qualitative characteristics of variables.
4. Evaluate the ethical considerations of a research design.
5. Be familiar with the five components of a research report and be able to write a research proposal.
6. Discuss the characteristics of a research design and critique research designs in the literature.
7. Identify threats to internal validity and external validity, and be able to discuss the methods used to control these threats.
8. Discuss random selection, random assignment, and the relationship between randomization and threats to internal and external validity.
9. Compare and contrast experimental designs, quasi-experimental designs, nonexperimental research, and other types of research.
10. Apply basic principles of classical measurement theory to research design.
11. Interpret reliability and validity in relationship to measurement of variables.
12. Define and select a variety of methods of observation and data collection in developing a research proposal and evaluating research in the literature.
13. Select appropriate statistical approaches for data analysis, including hypothesis testing, descriptive statistics, measures of relations, analysis of differences, analysis of variance, and multivariate analysis.

**Texts (Recommended Per Class Discussion):**

**Course Assignments**
1. *Problem Statement:* The problem statement will be a 2 - 3 page paper that will describe the research problem, state the research question(s), and define the independent and dependent variables.
2. *Research Proposal - Chapter 1:* Chapter 1 will be between 6 - 8 pages. This is a scientific paper and must be in APA format. There must be a minimum of 5 references from research-based articles from refereed journals. It must include citations to support the rationale, need for the study, background information given, and definitions. It must include the component parts of an introduction to a scientific report. Details will be presented in class.
3. *Research Proposal - Chapter 3:* Chapter 3 will be between 8 -10 pages. It must be written in APA format. Citations must be used to support any statements as necessary. It must include the component parts of research methodology, which will be presented in class.

**Value of Assignments**
- Research Proposal - Problem Statement 10 points
- Research Proposal - Chapter I 40 points
- Research Proposal - Chapter III 50 points

100 points
### Topics

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<td>Reliability</td>
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<td>Validity</td>
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<td>Inferential Statistics, Effect sizes, Missing Values</td>
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<td>Causal-Comparative, Ex post facto, Correlational design, Internal and External validity</td>
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**Additional Readings Will Be Posted to Blackboard and Announced in Class.**

**Grading Scale (%)**

- **A** = 90 – 100
- **A-** = 85 – 89
- **B+** = 83 – 84
- **B** = 78 – 82
- **B-** = 75 – 77
- **C+** = 73 - 74
- **C** = 68 - 72
- **F** = 67 and below
IMPORTANT NOTES
1. TURN YOUR CELL PHONE OFF PRIOR TO CLASS!
2. No Class March 15, 2017 Due to Spring Break
3. No Class April 12, 2017
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/assets/student-code-of-conduct-brochure.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]) and Graduate Catalog ([http://www.bulletins.wayne.edu/gbk-output/index.html]) under the heading “Student Ethics.” These university policies are also included as a link on Blackboard within each course in which students are enrolled. 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 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 5th 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 the fifth week of class students are no longer allowed to drop but must withdraw from classes. 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.
See the university webpage for full details:
http://reg.wayne.edu/students/information.php

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.

Wayne State University Writing Center
The Writing Center (2nd floor, UGL) provides individual tutoring consultations free of charge for students at Wayne State University. While the center serves both graduate and undergraduate students, undergraduate students in General Education courses, including composition courses, receive priority for tutoring appointments. The Writing Center serves as a resource for writers, providing tutoring sessions on the range of activities in the writing process – considering the audience, analyzing the assignment or genre, brainstorming, researching, writing drafts, revising, editing, and preparing documentation. The Writing Center is not an editing or proofreading service; rather, students are guided as they engage collaboratively in the process of academic writing,
from developing an idea to correctly citing sources. To make an appointment, consult the Writing Center website: http://www.clas.wayne.edu/writing/.

To submit material for online tutoring, consult the Writing Center HOOT website (Hypertext One-on-One Tutoring) http://www.clas.wayne.edu/unit-inner.asp?WebPageID=1330.