

Department of Psychology, Psy 820S—Statistics and Research Design I, Fall 2015
Section 001, MWF 10:10-11:00, Cammack 212, CRN 12501
Section 002, MWF 11:15-12:05, Cammack 212, CRN 12502
3 credit hours, service learning designation

Instructor

Dr. Richard Osbaldiston (Please call me “Dr. O.” or “Dr. Oz.”)

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Office hours: Tuesday 3:30-5:00, Thursday 3:30-5:00, or any other time by appointment.

Teaching Assistants

Sarah Hansford, sarah_hansford1@mymail.eku.edu

Andrew Manson, andrew_manson@mymail.eku.edu

Textbooks

- 1) Jackson, *Research Methods and Statistics, 3 ed.*, Wadsworth, ISBN 978-0-495-51001-7
- 2) Optional: Kirkpatrick and Feeney, *A Simple Guide to SPSS*, Wadsworth, ISBN: 0-49559766-X.
- 3) Optional: APA Publication Manual, *6 ed.*, ISBN 978-1-4338-0561-5.
- 4) Optional: Stevenson, *52 Essential Habits for Success*, ISBN 978-0965476522.

Computer Requirements

- 1) Access to a computer with internet capabilities (especially being able to use PsycInfo data base and access the course Blackboard site), word processing (Word), Excel, and SPSS software
- 2) A portable USB mass storage device (a small thumb drive will be sufficient for this course)
- 3) Frequent access to email. Official E-mail: An official EKU e-mail is established for each registered student, each faculty member, and each staff member. All university communications sent via e-mail will be sent to this EKU e-mail address.

Catalog Description

Principles and techniques of scientific observation, control, and analysis specifically oriented to research in psychology in the context of service learning. Evaluation of research designs and their implementation in professional settings. Emphasis on univariate statistical analyses.

Course Philosophy and Approach

The expectation of graduate students in psychology is that they will go on to pursue careers in the field of psychology, and as such they will actively practice psychology, be it in educational, clinical, organizational, or other settings. A key part of being a practitioner is being able to read and understand the scientific literature; in fact, being able to understand the scientific literature and translate it into useful practice in the job place is the job description of a practitioner. Thus, the purpose of this class is to help you understand the nuts and bolts of the research process such that you can read, understand, and utilize the scientific literature.

The approach that we will take in furthering our understanding of the research process is three-pronged:

- 1) We will closely study an undergraduate-level research methods text book to learn the basic concepts.
- 2) We will read scientific literature to see how the concepts that are introduced in the textbook are put into play in the literature. We will try to analyze the methods used in these articles so that we can understand how these methods are applied in research and how they are used to generate knowledge.
- 3) We will work on a couple of research projects to get practice putting to use the concepts from the textbook.

Scientific research is currently the most powerful intellectual tool that we have available to us. Given its power, it is important to understand how to do research, how to interpret its results, and how to use it practically. In this class, we will focus on understanding both non-experimental research (descriptive and correlational research) and experimental research.

Over-learning. You have probably already had at least two courses in research methods and statistics. From those courses, you know that you can't just read a research textbook once and understand all the intricacies of design and analysis. To master the process of scientific research, you have to work with the basic principles continuously and apply them in a variety of different ways. This is called "over-learning," that is, you take the same material and go over it several different times, and each time you cover it, you understand it at a new and deeper level.

Service learning. Although the primary objective of this course is learning how to understand scientific research, there is also a second objective of learning how research can be useful to society. Thus, we will work on a couple of research projects for community partners, and we'll get a chance to see how research helps people make the world a better place.

Eastern Kentucky University expects that graduate students will do at least four hours of work outside of class for each one hour of class time. As such, you should plan your schedule accordingly so that you can invest this effort in your learning experience.

Student Learning Outcomes

At the conclusion of this course, students will be able to:

1. locate, read, summarize, analyze, evaluate, integrate, and synthesize scientific literature.
2. apply principles of sound research design to develop research projects
3. analyze, interpret, and report data using appropriate statistical techniques.
4. use statistical software to analyze data.

All four of these objectives will be assessed through the homework assignments and exams. Students are responsible for locating, reading, and analyzing scientific literature frequently for homework, and there will be exam questions that require students demonstrate the skills of identifying independent and dependent variables, stating the measurement type of the variables, and correctly identifying the appropriate statistical tests to use. Further, the service learning projects will allow students to practice their skill at applying principles of sound research design, and students will be assessed at their ability to analyze and evaluate literature during the class discussions of the homework. In terms of analyzing, reporting, and interpreting data using the appropriate statistical strategies, students will be required to do this repeatedly for homework (especially when doing homework problems using SPSS) and on exams. Finally, there will be regular homework and two exams that assess students' skills at using statistical software for analyzing data

More specifically, the list of topics covered this semester includes:

Research Design

- Strengths and weaknesses of different types of designs: univariate, correlational, quasi-experimental, between groups experimental (including two-groups, one-way, two-way, and three-way designs), and repeated measures designs
- Practical design issues (e.g., choosing a sample, creating the materials, administering measures)
- Critical issues in design (e.g., control groups, reliability, validity)

Statistical analysis

- Descriptive stats (frequencies, measures of central tendency, measures of dispersion, reliability)
- Confidence intervals and effect sizes
- Correlation
- Analysis of variance, t-tests

Computer skills

- Using Excel to perform basic data analysis and presentation

- Using SPSS to compute descriptive stats, generate graphs and charts, manipulate data, compute inferential stats

Service Learning/Practical applications

- Do hands-on research for community partners
- Understand how research can be useful in real world settings

Classroom Dynamics

We will hold most classes in Cammack 212, the computer lab. This is convenient on days when we need to use the computers, but it is a distraction on days when we don't use them. If we are not doing computer work, please turn off the power to the computer monitor so that you can focus on the task at hand. Also, please leave cell phones in your pocket, bag, or backpack.

Course Requirements and Grading System

Homework: There will be some sort of homework due most days, including doing problems from the textbook, answering questions about research articles, using SPSS to do data analysis, or other related activities. Students may work cooperatively on these assignments, but all work turned in should be each student's own effort. Homework is due in class on the day indicated on the "time line of assignments" (posted on Blackboard), and most of the time it should be neatly typed (single spacing is fine).

Exams: There will be five exams during the course of the semester. Three of these exams will cover content from the textbook and lectures, and the other two will cover computer skills.

Projects: As a class, we will work together on research projects. The exact details of these projects will be announced ahead of time, and they will involve helping community partners with their research needs.

In-class exercises: Occasionally and without prior announcement, there may be short exercises to complete during class. Because of the spontaneous nature of these exercises, there can be no make-ups for students who miss these class periods.

Grades in this course will be computed according to the following weighting scheme:

Homework, projects, and in-class exercises	40%
Exams (5 total)	60%

Letter grades will be assigned according to the following scale:

A	100-90	B	90-80	C	80-75	F	below 75
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Attendance: From the ECU Graduate Catalog: "Research shows that students who regularly attend class are more likely to succeed. ECU students are responsible for course work covered during all class periods" (p. 34). Students who miss class must send the instructor an email explaining the situation prior to or as soon after the class as possible. Students who miss class will not be allowed to make up the in-class exercises. Students who miss class are responsible for getting the notes, handouts, and other materials from their peers. Students who miss 5 or more class periods may have their final grade lowered one letter grade, and students who miss 10 or more class periods may receive a failing grade.

Workload: From the ECU Graduate Catalog: "Graduate level courses are expected to require a minimum of four hours of outside preparation for every hour of lecture" (p. 37). This means that you should plan to spend a minimum of 10 hours per week preparing for this course, and you should plan to spend these 10 hours across at least three different days. Preparing for the course involves not only doing the assigned homework but also figuring out for yourself what areas you need to strengthen. Remember the principle of overlearning: for this class, you will probably have to re-read the book a couple of times, review your notes several times, and rehearse many of the skills that we are learning.

Expectations of professionalism: An important part of graduate training is learning how to be a professional. Professionalism is the big picture of how you approach everything that you do. Remember the adage “How you do one thing is how you do everything.”

Professionalism includes things that you have to do, and these are the expectations:

- Submit high quality work: invest the effort to have a complete learning experience; fully document what you have done so that it is “free standing” or self-explanatory; write in complete sentences; follow rules of grammar, punctuation, and spelling; create work that has a neat and tidy appearance
- Maintain focus and attention: stay on task, no sleeping, eating, texting, emailing, or other “multi-tasking”
- Present a professional appearance: be groomed and dressed as if you were going to work at a business setting
- Be on time: in the working world, “on time” means 5-10 minutes early

Professionalism also includes things about your character, and you should seek to always foster positive character traits including:

- Honesty and integrity
- Reliability and responsibility
- Respect and empathy for others
- Commitment to self-improvement

Disabilities Statement

A student with a “disability” may be an individual with a physical or mental impairment that substantially limits one or more major life activities such as learning, seeing or hearing. Additionally, pregnancy or a related medical condition that causes a similar substantial limitation may also be considered a disability under the ADA.

If you are registered with the Office of Services for Individuals with Disabilities, please obtain your accommodation letters from the OSID and present them to the course instructor to discuss any academic accommodations you need. If you believe you need accommodation and are not registered with the OSID, please contact the office in the Whitlock Building Room 361 by email at disserv@eku.edu or by telephone at (859) 622-2933. Upon individual request, this syllabus can be made available in an alternative format.

Academic Integrity

Students are advised that EKU’s Academic Integrity policy will be strictly enforced in this course. The Academic Integrity policy is available at <http://studentrights.eku.edu/academic-integrity-policy>. Questions regarding the policy may be directed to the Office of Academic Integrity located in the Turley House, or contact them by phone at (859) 622-1500.

Official Email

An official EKU email is established for each registered student, each faculty member, and each staff member. All university communications sent via e-mail will be sent to this EKU e-mail address.

Important Dates See <http://colonelscompass.eku.edu/deadlines-adddrop-refunds>

Classes begin: Aug 24

Important dates: Last day to drop a class (no grade on transcript): Sunday, August 30

Last day to withdraw from a course (W on transcript, no fee): Sunday, September 20

Last day to withdraw from a course (W on transcript, \$150 fee): Sunday, November 15