

PSY 3010/3015: RESEARCH METHODS IN PSYCHOLOGY with LAB
Spring, 2010
Class Meeting in HAZY 204 on Tuesday from 1:00-3:30
Lab Meeting in JENN 192 on Thursday from 1:00-3:00

Contact Information:

PROFESSOR: John T. Jones, Ph.D.
OFFICE: McDonald 220
OFFICE HOURS: 11:00 – 2:00 Mondays; 11:00 – 1:00 Wednesdays
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TEXT: Cozby, P. C. (2009). *Methods in Behavioral Research*. (3rd ed.) New York: McGraw-Hill.
Supplemental Readings: Posted to Blackboard.

I. **Course Description**

This course is an introduction to the research process; reasoning in science, the nature of theory, hypothesis testing and the use of empirical data; scientific knowledge and its applications. Naturalistic, case study, correlation, and experimental research methods will be examined. In this course you will also conduct theory driven basic research in psychology, to include hypothesis formulation and testing, data gathering, analysis, and interpretation. Includes both correlation and experimental research projects. The pre-requisite for this course is Psychology 3000 Statistical Methods in Psychology. This is a 3 cr. course and a 1 cr. lab.

II. **Course Learning Goals and Outcomes**

LEARNING GOAL 1: KNOWLEDGE BASE OF PSYCHOLOGY

Demonstrate familiarity with the major concepts, theoretical perspectives, and historical trends in psychology.

LEARNING OUTCOMES

1.1 Nature of psychology

- a. **Define** psychology as the science that studies behavior and mental processes and the profession that applies that science.
- b. **Distinguish** the similarities and differences between the professional and scientific communities in psychology.

1.2 Relationship of psychology to Science

- a. **Explain** how psychology meets the criteria of science.
- b. **Analyze** how psychological research reflects scientific principles.
- c. **Evaluate** psychological science as a means of understanding behavior and mental processes.

1.5 Objectives of psychology

- b. **Compare** and **contrast** the primary objectives of psychology

1.10 Role of ethics

- a. **Describe** relevant ethical issues, as addressed by the APA code of ethics
- b. **Apply** relevant ethical principles, as addressed by the APA code of ethics
- c. **Evaluate** policies and procedures related to psychology research and practice using APA ethical principles

LEARNING GOAL 2: RESEARCH METHODS IN PSYCHOLOGY

Understand and apply basic research methods in psychology, including research design, data analysis, and interpretation.

LEARNING OUTCOMES

2.1 Scientific method

- a. **Describe** the basic characteristics of the scientific method in psychology
- b. **Analyze** how primary behavioral research adheres to scientific principles
- c. **Design** research that adheres to the principles of scientific method

2.2 General research strategies

- a. **Describe** various general research strategies, including advantages and disadvantages of use
- b. **Distinguish** the nature of designs that permit causal inferences from those that do not
- c. **Select** and **apply** general research strategies to address appropriate kinds of research questions
- d. **Categorize** research articles that employ methods permitting causal and non-causal inferences
- e. **Evaluate** effectiveness of a general research strategy in addressing a research question

2.5 Correlation vs. Experimentation

- a. **Explain** the difference between correlation and causation
- b. **Match** research questions to appropriate method
- c. **Evaluate** whether a specific research method warrants a cause-effect conclusion

2.6 Research elements

- a. **Define** hypotheses, variables, and operational definitions
- b. **Deduce** hypotheses, variables, and operational definitions from research articles and scenarios
- c. **Formulate** testable research hypotheses, based on operational definitions of variables

2.7 Participant selection and assignment

- a. **Describe** rationale for choosing and assigning specific group of participants
- b. **Analyze** potential influence of participant variables
- c. **Design** appropriate controlled conditions to minimize their effects, including random assignment

2.8 Design quality (internal validity)

- a. **Define** validity and **describe** conditions that enhance valid findings
- b. **Analyze** conditions that will enhance or detract from validity of conclusions
- c. **Evaluate** the validity of conclusions derived from psychology research

2.9 Generalization(external validity)

- a. **Describe** the relationship of research design to generalizability of results
- b. **Analyze** the generalizability of research findings based on strengths or weaknesses of research design
- c. **Generalize** research conclusions appropriately based on the parameters of particular research methods

2.10 Reporting research findings

- a. **Identify** the basic components of APA style
- b. **Explain** (in writing) the methods, results and conclusions of a data collection project
- c. **Write** all sections of a research report and a review type paper applying APA style

2.11 Research ethics

- a. **Describe** the basic principles of the APA code of ethics for research with human and animal participants, including the role of an IRB
- b. **Adhere** to the APA code of ethics in the treatment of human and nonhuman participants in the design, data collection, interpretation, and reporting of psychological research
- c. **Evaluate** the contributions and constraints entailed in adherence to APA code of ethics and make appropriate adjustments in design
- d. **Complete** an IRB application

2.12 Sociocultural context and diversity

- a. **Identify** variations in behavior related to sociocultural differences
- b. **Apply** sociocultural framework to research strategies and conclusions

2.13 Database skills

- a. **Identify** and **locate** relevant journals and databases in psychology
- b. **Develop** and **adjust** search strategies to represent adequate range of research
- c. **Create** efficient and effective search strategies to address research questions

2.14 Statistical skills

- a. **Describe** the differences between descriptive and inferential statistical analysis
- b. **Define** statistical significance and its role in interpreting research findings
- c. **Analyze** and **interpret** simple statistics from research results and in journal articles

2.15 Limits of scientific reasoning and evidence

- a. **State** how evidence is contextual and tentative
- b. **Discuss** the reasons why empirical findings and conclusions may change or require adjustment
- c. **Justify** the evolving nature of scientific findings

LEARNING GOAL 3: CRITICAL THINKING SKILLS IN PSYCHOLOGY

Respect and use critical and creative thinking, skeptical inquiry, and, when possible, the scientific approach to solve problems related to behavior and mental processes.

LEARNING OUTCOMES

3.1 Use of evidence in psychology

- b. **Collect** and **use** scientific evidence in drawing conclusions and in practice

c. **Evaluate** the quality, objectivity, and credibility of evidence of research findings in drawing conclusions and in practice

3.2 Association skills

a. **State** connections between diverse facts and theories

b. **Relate** connections between diverse facts and theories

c. **Apply** diverse facts and theories over a wide range of contexts

d. **Assess** the quality of connections made between diverse facts and theories

3.3 Argumentation skills

c. **Develop** sound, integrated arguments based on scientific reasoning and empirical evidence

3.5 Questioning skills

a. **Explain** the appropriateness and relevance of questions with direction and guidance

b. **Differentiate** independently between ill-defined and well-defined questions

c. **Evaluate** and **modify** questions to eliminate ambiguity throughout the process of scientific inquiry

3.6 Creativity

a. **Describe** elements of creativity and its role in solving psychological problems

III. Class Policies

A. **Behave honorably.** I expect you to avoid cheating and that you bring to my attention your knowledge of cheating that others might do. Remember that cheating involves both getting help and giving help on evaluated tasks that are supposed to be done independently (e.g., tests, quizzes, written projects).

B. **Arrive on time.**

C. **Do not talk excessively during lecture (e.g. when I am talking).** I know this is tough, but this includes not talking during the last three minutes of lecture. Occasionally, people will start putting up their material and talking as we near the end of lecture. Don't be that person.

D. **Avoid leaving lecture early.** Not only is this distracting to your fellow students, it's distracting to me. I do understand that occasionally people must miss part of a class. **If you intend to do so, please let me know and then sit near the door if possible**, so you can slip out without distracting everyone.

E. **If you have questions, please ask.** You may try to see me after class, but don't get frustrated if there is not time. Best: come by my office during office hours or set up an appointment with me. You are my priority at DSC. We can find a time that works for both of us.

F. **Notes.** I will post the slides to Blackboard unless attendance suffers, and then I won't.

G. **Grade checks.** If you need me to verify your grade for athletic/scholarship/financial aid purposes etc....you must either come see me during office hours or make an appointment.

IV. Quiz Policy

A. YOU MUST DROP ONE of the five quizzes. **You cannot drop the Final Exam.**

B. **On the five quizzes, there will UNDER NO CIRCUMSTANCES be make-ups or early quizzes.** *If you cannot take the quiz at the time it is offered, you receive a zero.* Presumably you will drop that grade. If you miss a second quiz and have a legitimate excuse (legitimate means that you face dire circumstances like serious documented injury/illness) contact me and we will arrange for a make-up. The make-up will be different from the quiz taken by others in the course.

C. Quizzes will only cover the material since the previous quiz. Each quiz will consist of questions regarding material from the book, lecture/discussion, and any supplemental readings.

D. **The Final Exam.** The final exam is comprehensive and will be worth 150 points.

E. The final exam will be taken in class and it will be comprehensive.

F. If you have a question about your score on a quiz, come by my office during office hours or set up an appointment with me. We can go over the exam to make sure it was scored correctly. You can also ask for clarification regarding exam questions.

V. Earning Points in the Course

A. **Quizzes:** Taken in class, each quiz will objectively assess your mastery of basic concepts and ideas corresponding to the major approaches to personality.

Total for Quizzes **200 pts.**

B. **Homework:** To demonstrate your mastery of the major terms and concepts associated with research methods in psychology you will complete 8 homework assignments. Detailed instructions will be distributed with each homework assignment. Late homework (not turned in by 1:00 p.m. on the due date) will not be graded.

Total for Homework (8 x 25 pts.) **200 pts.**

C. **Research Project:** The research project will include both a correlational and experimental component. Because of the number of students in the course, this project will be completed in groups. More information about this project will be distributed by the third week of class.

Total for Research Project **200 pts.**

D. **Final Exam:** Taken in class on Thursday May 6th from 12:30-2:30.

Total for Final Exam **150 pts.**

Summary of Points Possible:

Quizzes	200
Case Studies	200
Research Project	200
Final Exam	150
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Total	750

VI. Grading Policy

<u>Grade</u>	<u>Percent</u>	<u>Grade</u>	<u>Percent</u>
A	94% - 100%	C	74% - 76%
A-	90% - 93%	C-	70% - 73%
B+	87% - 89%	D+	67% - 69%
B	84% - 86%	D	64% - 66%
B-	80% - 83%	D-	60% - 63%
C+	77% - 79%	F	59% AND BELOW

You can convert the points you have earned into a percentage by using the following formula.

Points you earned ÷ Points possible = your percentage

CLASS SCHEDULE

January 12th: Introduction, Characteristics of Science (Cozby, Chapter 1)

- Science vs. Pseudoscience, Scientific Method, Critical thinking

January 14th: Lab

January 19th: The Research Process (Cozby, Chapter 2)

- Developing ideas, theories, hypotheses, and gathering information for research
- Distribute **Homework #1**.

January 21st: Lab

- **Collect HW #1**
-

January 26th: Conducting Ethical Research (Cozby, Chapter 3)

- **Quiz # 1 (Ch. 1-2)**
- Risk vs. Benefit, Deception, Informed Consent, Research with Humans and Animals
- Distribute **Homework #2**

January 28th: Lab

- **Collect HW #2**
-

February 2nd: Studying Behavior (Cozby, Chapter 4)

- Operational Definitions, Experimental & Non-Exp. Approaches, Independent vs. Dependent Variables, Causation, Validity
- Distribute **Homework #3**

February 4th: Lab

- **Collect HW #3**
-

February 9th: Measurement Concepts (Cozby, Chapter 5)

- **Quiz #2 (Ch. 3-4)**
- Reliability and Validity, Types of Data, Scales of Measurement
- Distribute **Homework #4**

February 11th: Lab

- **Collect HW #4**
-

February 16th: Observing Behavior (Cozby, Chapter 6)

- Naturalistic Observation, Systematic Observation, Case Study, Archival Research
- Distribute **Homework #5**

February 18th: Lab

- **Collect HW #5**
-

February 23rd: Survey Research (Cozby, Chapter 7)

- **Quiz # 3 (Ch. 5-6)**
- Designing & administering Surveys & Questionnaires, Presenting Data
- Distribute **Homework #6**

February 25th: Lab

- **Collect HW #6**
-

March 2nd: Survey Research cont....

- Distribute **Homework #7**

March 4th: Lab

- Collect **HW #7**
-

March 16th: Experimental Design (Cozby, Chapter 8)

- Distribute **Homework #8**
- Control, Confounds, Within & Between Subjects Designs, Validity and Reliability

March 18th: Lab

- Collect **HW #8**
 - Review Research Project Topics.
-

March 23rd: Conducting Experiments (Cozby, Chapter 9)

- **Quiz # 4 (Ch. 7-8)**
- Selecting Subjects, Designing & Conducting Field & Lab Research

March 25th: Lab

- **Research Project IRB Proposal Due**
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March 30th: Conducting Experiments cont. (Cozby, Chapter 9)

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April 1st: Lab

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April 6th: Complex and Quasi-Experimental Designs (Cozby, Chapter 10, 11)

- Data Collection for Research Project

April 8th: Lab

- Data Collection for Research Project
-

April 13th: Descriptive Statistics and Correlation (Cozby, Ch.12)

- **Quiz #5 (Ch. 9-11)**
- Data Collection for Research Project

April 15th: Lab

- Data Reduction and Descriptive Analysis
-

April 20th: Inferential Statistics and Generalization (Cozby, Ch 13 & 14)

- Data Analysis and Interpretation
- APA Style

April 22nd: Lab

- Research Project Prep
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April 29th: Research Project Report Due

May 6th from 12:30 – 2:30: Final Exam (Covers Ch. 1-14)

STATEMENT ABOUT DMAIL

Important class and college information will be sent to your Dmail account. You will be responsible for checking and responding to email (in a reasonable amount of time) in your Dmail account.

DISCLAIMER

Information contained in this syllabus, other than the grading scale and missed test policy may be subject to change with advanced notice, as deemed appropriate to the instructor.

STUDENTS WITH SPECIAL NEEDS

If you are a student with a medical, psychological or a learning difference and requesting reasonable academic accommodations due to this disability, you must provide an official request of accommodation to your professor(s) from the Disability Resource Center (DRC) **within the first two weeks** of the beginning of classes. Students are to contact the center on the main campus to follow through with, and receive assistance in the documentation process to determine the appropriate accommodations related to their disability.

You may call **(435) 652-7516** for an appointment and further information regarding the Americans with Disabilities Act (ADA) of 1990 per Section 504 of the Rehabilitation Act of 1973. The DRC is located in the **Student Services Center, Room #201 of the Edith Whitehead Building**.

OTHER IMPORTANT DATES/DEADLINES

Jan 13	Last Day to Add Without Signature
Jan 18	Martin Luther King Jr. Day
Jan 19	Drop fee begins (\$10 per class)
Jan 26	\$50 Late Registration/Payment Fee
Feb 2	Last day for Refund; Last day to drop without receiving a "W" grade
Feb 3	Courses dropped for non-payment
Feb 5	Last Day to ADD Classes
Feb 15	President's Day
Feb 22	Mid-Term Grades Due
Mar 5	Last Day to DROP/AUDIT Classes
Mar 8-12	Spring Break
Apr 2	Last Day for Complete Withdrawal
Apr 29	Classes End
Apr 30; May 3-6	Final Exams
May 7	Commencement