PSYC 0105 - RESEARCH METHODS IN PSYCHOLOGY

Catalog Description

Formerly known as PSYC 5
Prerequisite: Completion of PSYC 100 with grade of "C" or better; completion of PSYC 142 or MATH 13 with grade of "C" or better
Advisory: Completion of ENGL 1A with grade of "C" or better
Hours: 108 (54 lecture, 54 laboratory)
Description: Introduction to research methodology, experimental design, and hypothesis testing in the behavioral sciences. Includes the execution, analysis (with statistical software), interpretation, and reporting of individual research projects. (C-ID PSY 205B) (CSU, UC)

Course Student Learning Outcomes

- CSLO #1: Contrast the scientific method with nonscientific methods of obtaining information.
- CSLO #2: Evaluate the advantages and disadvantages of experimental designs and other research approaches used in psychology.
- CSLO #3: Critically evaluate published empirical research studies.
- CSLO #4: Analyze the ethical issues raised in psychology research using the principles of the American Psychological Association.
- CSLO #5: Conduct scientific research, analyze the data, interpret the results, and communicate the findings using American Psychological Association (APA) style.

Effective Term

Fall 2022

Course Type

Credit - Degree-applicable

Contact Hours

108

Outside of Class Hours

108

Total Student Learning Hours

216

Course Objectives

Lecture Objectives:
I. Methods of Understanding Behavior
a. Describe nonscientific sources of data used in attempts to explain behavior.
b. Explain the scientific method.
c. Compare scientific and nonscientific sources of data.
II. Ethics in Research
a. Discuss the APA guidelines for the conduction of scientific research.
b. Explain what the Institutional Review Board is and what it does.
c. Describe the guidelines for the use of animals in psychology research.
III. Hypothesis Testing
a. List the criteria for a good hypothesis.
b. Explain how hypotheses are generated.
c. Define the null and alternative hypotheses and explain their roles in the research process.
IV. Sampling
a. Define probability and nonprobability sampling and provide examples of each type.
b. Compare probability and nonprobability sampling in terms of advantages and disadvantages.
V. Measurement of Behavior
a. Discuss the four levels of measurement (nominal, ordinal, interval, and ratio) and provide examples of each.
b. Define validity and explain the different types of validity relevant to measurements in psychology research.
c. Define reliability and explain the different types of reliability relevant to measurements in psychology research.
VI. Experimental Research
a. Discuss the necessary components of an experiment.
b. Define extraneous variable and confounds and describe the relationship between these two concepts.
c. Explain the methods that are used to control for extraneous variables in psychology research.
d. Describe the different experimental research designs (between-subjects, within-subjects, and factorial).
VII. Nonexperimental Research
a. Compare nonexperimental and experimental approaches with regard to external validity (generalizability of results) and internal validity.
b. Describe each of the nonexperimental (case studies, field studies, archival research, qualitative research, surveys and interviews, correlational research, and quasi-experimental designs) approaches to psychology research.
c. Identify the strengths and weaknesses of each of the types of nonexperimental research.
VIII. Research Results
a. Explain how the correct statistical test is chosen for a given set of data.
b. Discuss the factors that a researcher must consider when interpreting results that either do or do not support a hypothesis.
IX. Scientific Writing
a. Describe the components of a scientific research paper.
b. Explain how the results of previous research are synthesized into the literature review component of a research paper.
c. Apply the proper APA formatting when writing a research paper.
Laboratory Objectives:
I. Design a research project using an experimental or nonexperimental approach.
II. Conduct a literature review relevant to the topic of your project.
III. Collect data from human participants.
IV. Analyze and interpret the results of the project.
V. Communicate these research findings using APA style.

General Education Information

- Approved College Associate Degree GE Applicability
  - AA/AS - Behavioral Sciences
  - AA/AS - Comm & Analyt Thinking
- CSU GE Applicability (Recommended-requires CSU approval)
  - CSUGE - D7 Interdisciplinary Soc/Behav
  - CSUGE - D9 Psychology
- Cal-GETC Applicability (Recommended - Requires External Approval)

- IGETC Applicability (Recommended-requires CSU/UC approval)
  - IGETC - 4I Psychology

Articulation Information

- CSU Transferable
- UC Transferable

Methods of Evaluation

- Essay Examinations
  - Example: In an essay, describe what is necessary to determine causality? In other words, what is necessary to demonstrate that a causal relationship exists between two variables? Rubric Grading.
- Objective Examinations
  - Example: Example question: Barbara studied the effects of both viewing angle (three angles were used) and computer monitor display size (two sizes were used) on eye blink rate. She used a between-subjects approach. This study A. required five groups. B. required two groups. C. was a factorial design with two factors. D. was a factorial design with six factors.
- Projects
  - Example: By yourself or in a group of up to three, design and carry out a psychology research project. This must be an empirical project in which you collect data from a suitable number of participants. You will then analyze and interpret the results and write an APA-style report which includes a review of the literature as well as your results. This paper will be assessed using a rubric. In addition, you will present the results to the class and be prepared to address any questions from other students; this presentation will also be assessed using a rubric.

Repeatable

No

Methods of Instruction

- Laboratory
- Lecture/Discussion
- Distance Learning

Lab:

1. After an instructor demonstration of how to calculate the mean, standard deviation, and the t statistic using Excel, students will be provided with a data set to analyze. Students will report the results in APA format and discuss how to best interpret the results.

Lecture:

1. The instructor will lecture on the types of extraneous variables that can make it difficult to interpret the results of experiments. The students will then be provided with examples of experiments with such problems and will be asked to identify them during a discussion period.

Distance Learning

1. The instructor will provide background material on the Barnum Effect for students to read and answer discussion questions. Students will be assigned to groups to collect and analyze data on the Barnum Effect. Students will collaborate to present the data to the class as a Discussion Board presentation. Each student will need to post 1 question to the authors of the study presentation regarding one of the following sections: the background, the method, the results or the discussion. Presenters will need to answer questions of fellow students. The instructor will moderate these discussions and help to answer questions that come up and guide students in thinking about how their questions apply to specific concepts they have learned about previously.

Typical Out of Class Assignments

Reading Assignments

1. Read the article "Living Large: The Powerful Overestimate Their Own Height" by Duguid and Goncalo (2012). Be prepared to describe the independent and dependent variables and main results of the experiments. 2. Read Chapter on Ethics of the textbook. Be prepared to discuss the basic ethical guidelines that all behavioral researchers must observe. In addition, consider the question of animal research ethics. Do you believe that animal research requires ethical guidelines?

Writing, Problem Solving or Performance

1. Find a research article on a topic in psychology that interests you. Write a summary of the work. Include the basic problem addressed by the research, the hypothesis or research question, the sample used, a brief description of the procedure, the results, and the main implications of the work. 2. Your friend tells you that psychological research is "worthless" because all you study are "white rats and college students." Furthermore, he states that the subjects in your research don't even represent the population at large. Respond to this criticism.

Other (Term projects, research papers, portfolios, etc.)

By yourself or in a group of up to three, design and carry out a psychology research project. This must be an empirical project in which you collect data from a suitable number of participants. You will then analyze and interpret the results and write an APA-style paper which includes a review of the literature as well as your results.

Required Materials

- Research Methods in Psychology
  - Author: Beth Morling
  - Publisher: Norton
  - Publication Date: 2018
  - Text Edition: 3rd
  - Classic Textbook?:
  - OER Link:
  - OER:
- Methods in Behavioral Research
  - Author: Cozy and Bates
  - Publisher: McGrawHill
  - Publication Date: 2018
  - Text Edition: 13th
  - Classic Textbook?:
  - OER Link:
  - OER:
- The Psychologist as Detective: An Introduction to Conducting Research in Psychology

- Author: Smith and Davis
- Publisher: Pearson
- Publication Date: 2012
- Text Edition: 6th
- Classic Textbook?:
- OER Link:
- OER:

Other materials and-or supplies required of students that contribute to the cost of the course.