PSY 203: RESEARCH METHODS IN PSYCHOLOGY

Citrus College Course Outline of Record

Heading	Value
Effective Term:	Fall 2021
Credits:	4
Total Contact Hours:	108
Lecture Hours :	54
Lab Hours:	54
Hours Arranged:	0
Outside of Class Hours:	108
Prerequisite:	PSY 101 or PSY 101H; PSY 103 or MATH 165 or MATH 165H.
Strongly Recommended:	ENGL 101.
Transferable to CSU:	Yes
Transferable to UC:	Yes - Approved
Grading Method:	Standard Letter

Catalog Course Description

An introductory course in research methodology designed for students in the behavioral and social sciences. The application of basic skills in descriptive and inferential statistics is stressed, as well as critical analysis of experimental and non-experimental research methods in basic and applied research settings. 54 lecture hours, 54 lab hours.

Course Objectives

- Utilize college-level articulation to summarize different social and behavioral science research designs by actively participating during in-class discussions. Exhibit college-level critical thinking, comprehension, and writing fluency to appraise contents of literature in the social and behavioral sciences by completing written assignments and examinations.
- Demonstrate proficiency in manipulating and analyzing numerical data in order to critique scientific study outcomes by correctly interpreting and constructing numerical tables and figures. Select and perform appropriate statistical tests utilizing statistical software to analyze data obtained from different research methodologies and establish competence through completion of statistical statistical problems.
- Distinguish the basic research approaches and design methods required in social and behavioral research in order to develop multiple hypothesis testing methods appropriate to different problems in the real world. Satisfactorily complete exam questions to demonstrate proficient knowledge of subject. Demonstrate aptitude in professional academic writing style, including APA-formatting, in the social and behavioral sciences through completion of major written assignment.

Major Course Content

1. Introduction to the Scientific Method
    a. Asking the right questions: hypothesis testing
    b. Acquiring knowledge, Data Collection
        i. Experiments
        ii. Correlations
        iii. Surveys
        iv. Naturalistic observations
        v. Case studies
2. Ethics in Research
    a. Participant rights
    b. Issues in animal studies
3. Measuring and Evaluating Data
    a. Descriptive statistics
        i. Reading tables and figures
        ii. Measures of central tendency (mean, median, mode)
        iii. Measures of variability (variance, standard deviation)
    b. Inferential statistics
        i. Populations and samples
        ii. Probability
        iii. Normal distributions
        iv. Standardized scores
4. Reliability and Validity
    a. Sources of bias, errors
    b. Internal validity, external validity
5. The Experiment
    a. Selecting samples
    b. Manipulating, measuring variables
    c. Between-subjects designs, within-subjects designs
6. Experimental Designs: Single Independent Variable
    a. T-Test
    b. One-way ANOVA
7. Experimental Designs: Multiple Independent Variables
    a. Factorial designs
    b. 2 x 2 ANOVA
8. Non-Experimental Designs
    a. Correlations and Regression
    b. Observational studies
9. Writing Research Reports in APA-format
    a. Writing style
    b. Presentation of past research
    c. Presentation of data
    d. References and citations

Lab Content

1. Measuring and Analyzing Subject Responses
    a. Sorting nominal, ordinal, interval, and ratio data
    b. Choosing the appropriate statistical analysis
2. Designing Figures (Required: Microsoft Excel installed on lab computers)
    a. Frequency histograms
    b. Bar graphs
    c. Line graphs
    d. Pie charts
    e. Scatter plots
3. Experiments & Studies
    a. Sampling & Assignment of Participants
    b. Identifying IV (manipulated variable) and DV (measured variable)
    c. Operational definitions

   d. Student-designed project (non-experimental or experimental): final project
   e. Reading and reporting past research
4. Statistical Analysis (Required: SPSS software installed on lab computers)
   a. Calculating mean, median, and standard deviation
   b. Single independent variable with two levels: the T-test
   c. Single independent variable with more than two levels: Analysis of Variance (ANOVA)
   d. Multiple independent variables: Two-factor ANOVA
   e. Calculating correlation coefficients and the regression line
   f. Calculating & reporting effect size
   g. Other (e.g. chi-square, Factor, Analysis)
5. Writing Workshop: The Professional Research Report
   a. APA-formatting (highly recommend APA Manual)
   b. Other writing skills (grammar, spelling, word choice, etc.)
   c. Avoiding plagiarism, using proper citations

Suggested Reading Other Than Required Textbook

Publication Manual of the American Psychological Association

Examples of Required Writing Assignments

- Semester-long project (see above) that culminates in an APA-formatted manuscript. Students typically complete each section throughout the semester (Introduction, Method, Results, etc.) to receive feedback for final paper submission to improve in their writing competency. Introduction requires the analysis and presentation of past research; Method section requires the development of their survey and and being able to clearly explain their study in paragraph form; Results section is written after they have collected, analyzed, and interpreted their own data and they must demonstrate an understanding of statistical analysis, how to report their findings, and creating APA-style tables. The final paper also includes a Discussion section where they evaluate the meaning of their findings, limitations of their study, and future directions for study.

Examples of Outside Assignments

Some of the following may be started or completed in lab: - Web-based academic literature search (e.g. Citrus College Library: EBSCO database) and critical evaluation of past research. Avoiding plagiarism worksheet, where students identify acts of plagiarism and indicate why it is plagiarism, followed by opportunities to practice summarizing and citing published work. Practicing APA-formatting by "correcting" a manuscript full of APA-format errors. - Identifying the measurement scale and appropriate statistical test for different types of data. Properly labeling different types of variables and their operational definitions in past studies. - Interpretation and write-up of statistical analysis output from publicly accessible data, including descriptive statistics, correlations, and t-tests. - Designing a study from start to finish, including creating a survey, collecting data from peers on campus, analyzing and interpreting that data and ultimately writing a complete research manuscript in APA-format and style.

Instruction Type(s)

Lecture, Lab, Online Education Lecture, Online Education Lab

IGETC Area 2: Mathematical Concepts and Quantitative Reasoning

Yes

IGETC Area 4: Social and Behavioral Sciences

4I. Psychology