Sociology 109B
Research Methods in the Behavioral Sciences
4 units; 3 hours lecture; 3 hours laboratory
Prerequisite: Mathematics 150 or Mathematics 150H Sociology 109A or Psychology 9A with a minimum grade of C in prerequisite
Degree applicable Transfer CSU, UC

This course is centered on the philosophy of science in general and the scientific method in particular. Students develop individual research studies with these elements: literature review, hypothesis design and method, data collection and analysis, and discussion, oral presentation, and manuscript preparation (APA Publication Style).

Note: Sociology 109B is the same course as Psychology 9B.

Course Objectives:

1. Apply basic Philosophy of Science concepts (i.e., empiricism, rationalism, objectivity, falsifiability) to (a) differentiate science, philosophy, religious and cultural traditions, intuition, and authority; (b) explain how two basic characteristics are central to science; and (c) explain differing interpretations of the goals of science.
   Other (specify)
   Short Essay/Multiple Choice Exam Item
2. Explain how research topics can come from different sources by defining and differentiating these concepts: Hypothetico-Deductive method (including theory, hypothesis, and prediction), common sense, casual observation, and practical problems.
   Other (specify)
   Short Essay/Multiple Choice Exam Item
3. Analyze different ethical issues in research (i.e., deception, informed consent, privacy, and confidentiality).
   Other (specify)
   Essay Exams, Multiple Choice, True/False
4. Explain the role of variables in research by (a) defing and differentiating these types of variables: hypothetical versus concrete, qualitative versus quantitative, predictor(independent) versus response (dependent), manipulated versus natural (subject), extraneous versus confounding and (b) explaining why psychological research is dominated by hypothetical variables and so relies upon operational definitions to remain empirical.
   Other (specify
   Short Essay/Multiple Choice Exam Item
5. Explain the standards of variable measurement by (a) defining and differentiating these concepts: standardization, reliability (test-retest, split-half, inter-rater), and validity (face, construct, convergent, discriminant, criterion, predictive) and (b)explaining why reliability must be established before validity.
   Other (specify)
   Short Essay, Multiple Choice Exam Item
6. Explain the variety of functional relations between predictor and response variables by defining and differentiating these concepts: causal, correlational, coincidental, bidirectional, third variable.
   Other (specify)
   Short Essay Exam Item, Homework problem
7. Explain the issues involved in sampling participants by (a) defining and differentiating probability sampling (e.g., simple random, stratified, cluster) and nonprobability sampling (e.g., haphazard, quota) and (b) explaining why psychological research rarely employs random sampling.
   Other (specify)
   Short Essay Exam Item, Homework problem

8. Describe the strengths and limitations of various research designs by (a) defining and differentiating naturalistic, case study, archival, correlational, experimental, andquasi-experimental designs and (b) evaluating these designs in terms of internal validity and external validity (including the idea that only experimental designs support causal conclusions.
   Other (specify)
   Short Essay, Multiple Choice Exam Item, Homework problem
9. Elaborate upon the concepts of conclusion validity by (a) defining and differentiating various threats to internal validity (e.g., history, maturation, testing reactivity, instrument decay regression to the mean, placebo and expectancy effects), (b)defining and differentiating various designs for controlling threats to internal validity(e.g., pretest-posttest, posttest-only, Solomon 4 Group, repeated measure [including counterbalancing and Latin Square]), (c) explaining how complex designs enhance conclusion validity, including designs with 1 predictor variable but 3+ groups (e.g., dismantling studies) and factorial designs with 2+ predictor variables and 4+ groups(including main effects and interaction effects).
   Other (specify)
   Short Essay Multiple Choice Exam Item
10. Define and differentiate nomothetic (group) and idiographic (single-subject) designs, especially in terms of statistical versus experimental control of error variability.
   Other (specify)
   Short Essay, Multiple Choice Exam Item
11. Prepare to participate in each step of the process of research in an academic setting by participating in a research group, including (a) composing and presenting research ideas, associated questions and issues and responding to the ideas, issues, and questions of others; (b) designing a research project through library research and consultation with peers and professor in the research group (and culminating in a APA-style written proposal; (c) carrying out the project by recruiting subject, collecting and statistically analyzing the data, and presenting the project inan APA-style written report.
   Other (specify)
   Laboratory Reports, Reading Reports, Term or Other Paper, Written Homework, Field Work

Student Learning Outcomes (SLO):

1. Logic of the Scientific
   On examination (e.g., m/c, T/F, fill-in, matching, essay), written essay, research paper, and/or oral presentation, students will be able to explain and critique essential components of the scientific method in psychological research.
2. Fundamental Principles
   On examination (e.g., m/c, T/F, fill-in, matching, essay), written essay, research paper, and/or oral presentation, students will be able to explain and apply essential elements of the scientific method in psychological research.
3. Everyday Application
   On examination (e.g., m/c, T/F, fill-in, matching, essay), written essay, research paper, and/or oral presentation, students will be able to evaluate both the adequacy and relevance of research in their efforts to understand everyday life experiences (e.g., choose a diet plan, decide if a treatment or product is safe and effective, vote for or against a proposition).

ADA Statement:

El Camino College is committed to providing educational accommodations for students with disabilities upon the timely request by the student to the instructor. A student with a disability, who would like to request an academic accommodation, is responsible for identifying herself/himself to the instructor and to the Special Resource Center. To make arrangements for academic accommodations, contact the Special Resource Center.

Student Code of Conduct

https://www.elcamino.edu/administration/board/2019-policies/AP%205500%20Student%20Conduct%20.pdf

Student Rights and Grievances Procedure 5530

https://www.elcamino.edu/administration/board/boarddocs/AP%205530%20STUDENT%20%20RIGHTS%20AND%20GRIEVANCES.pdf