

# RESEARCH METHODS IN PSYCHOLOGY CERTIFICATE

## Overview

The Certificate in Research Methods will prepare students for graduate study in many social and behavioral science areas. In addition, it will provide a background in research that will enable students to find employment as research assistants, engaged in data collection, coding, and analysis, after completing their undergraduate degrees. Finally, it will equip students with an informal credential that may be appealing in areas of employment where production, manipulation, and interpretation of data is an important function. Courses in the Certificate in Research Methods include an introductory level research methods course, upper-level research methods courses, a statistics course, and an opportunity to conduct independent research under the supervision of a faculty member

## Degree Offered

- Certificate in Research Methods in Psychology

## Contact

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## Research Methods in Psychology Certificate Requirements

( 18-21 credits)

Code	Title	Credits
<b>Required Courses:</b>		
PSY 105	Introduction to Research in Psychology	3
PSY 201	Statistics and Research Design	3
PSY 315	Psychological Tests	3
PSY 490	Independent Study: Research and Creative Expression	1-4
<b>Select two of the following:</b>		<b>8</b>
PSY 302 & 302L	Research Methods: Cognition and Research Methods: Cognition Lab	
PSY 303 & 303L	Research Methods: Social Psychology and Research Methods: Social Psychology Lab	
PSY 306 & 306L	Research Methods: Sensation & Perception and Sensation & Perception Lab	
PSY 329 & 329L	Research Methods in Organizational Psychology and Research Methods in Organizational Psychology	
PSY 335 & 335L	Research Methods: Human Cognitive Neuroscience and Research Methods: Human Cognitive Neuroscience Lab	

PSY 336 & 336L	Research Methods: Animal Learning & Behavior and Animal Learning and Behavior Lab	
PSY 339 & 339L	Research Methods in Applied Behavior Analysis and Research Methods in ABA Lab	
PSY 340 & 340L	Research Methods: Group Dynamics and Group Dynamics Lab	
PSY 350 & 350L	Research Methods: Developmental Psychology and Developmental Psychology Lab	
<b>Total Credits</b>		<b>18-21</b>

## Courses and Descriptions

### PSY 105 Introduction to Research in Psychology 3 Credits

Students will be introduced to the basic research methods used in psychology including, surveys, experiments and observation. Students will collect data and learn to describe this data using basic tools of analysis including graphic display and statistical analysis. Students will read original psychological research and learn to write using the conventions of the American Psychological Association.

**Prerequisite(s):** a grade of "C" in PSY 100 or PSY 102 or PSY 110 or PSY 131.

### PSY 201 Statistics and Research Design 3 Credits

Introduces students to statistics and research methods in the behavioral sciences. Covers the fundamentals of descriptive and inferential statistics, a variety of issues in research design, selected research designs including the case study, correlational and experimental designs. In addition, students will explore the literature in psychology in order to examine the use of statistics and research design in real research problems.

**Prerequisite(s):** grade of "C" in PSY 105.

### PSY 315 Psychological Tests 3 Credits

Examines the history of psychological testing. Issues concerning the construction of psychological tests are discussed, including concepts concerning reliability, validity, and item analysis. The rationale and structure of the major tests of intelligence, aptitude, and personality are reviewed, including the Rorschach, WAIS, TAT, MMPI, and Bender-Gestalt. In the last section of the course, students are given hands-on experience in the administration, scoring, and interpretation of a standard test battery.

**Prerequisite(s):** any statistics course.

### PSY 490 Independent Study: Research and Creative Expression 1-4 Credits

Provides students with an opportunity to design and carry out original research in an area of their choice. Students designate a faculty supervisor and work closely with him/her during the semester. All students must have approval from the department and the dean to register for PSY 490.

**Prerequisite(s):** PSY 201.

**PSY 302 Research Methods: Cognition 4 Credits**

Provides students with an in-depth coverage of the expanding field of cognition and memory. Addresses issues and research within the field. Emphasis is on current views of human memory. Students learn how to design and conduct their own experiments from the topic areas of information processing, psycholinguistics, problem solving, learning and memory, social cognition, and cognitive neuroscience. Laboratory skills include programming computers, developing multimedia stimuli, recording psycho-physiological data, and composing an APA-format research report in a network-based writing lab. Prerequisite(s): a grade of "C" in PSY 201; PSY 225, PSY 237 or PSY 325 or permission of instructor. **Corequisite(s):** PSY 302L.

**PSY 302L Research Methods: Cognition Lab 0 Credits**

This lab is a co-requisite and must be taken with the corresponding course.

**Corequisite(s):** PSY 302.

**PSY 303 Research Methods: Social Psychology 4 Credits**

Covers research methodology within the context of social psychology (i.e., topics include altruism, aggression, attraction and social perception). Both experimental and descriptive methodologies will be covered. Students learn about various aspects of the research process (e.g., design and execution of a social psychological study, analyzing and interpreting the results). Students also learn to integrate their research findings to produce an APA-style paper. Students use computer-based word processing and statistical analysis packages to achieve these goals. Prerequisite(s): a grade of "C" in PSY 201; PSY 240 or PSY 279 or permission of instructor.

**Corequisite(s):** PSY 303L.

**PSY 303L Research Methods: Social Psychology Lab 0 Credits**

This lab is a co-requisite and must be taken with the corresponding course.

**Corequisite(s):** PSY 303.

**PSY 306 Research Methods: Sensation & Perception 4 Credits**

Provides instruction in research design, research methods, and integration of data analysis and methodology within the content framework of sensation and perception. All the general psychology research methods are taught. Special emphasis is given to the study of human vision and audition. Students design, conduct, and report laboratory research in the areas of sensation and perception. The computer-based components of the laboratory include lessons on interactive software instrumentation for research, and network-based technical writing using APA format. Projects are conducted during the term. Each student uses a dedicated networked Macintosh computer to: a) develop and generate research stimuli and procedures, b) analyze and report research data, and c) write formal research reports. Prerequisite(s): a grade of "C" in PSY 201 or permission of instructor.

**Corequisite(s):** PSY 306L.

**PSY 306L Sensation & Perception Lab 0 Credits**

This lab is a co-requisite and must be taken with the corresponding course.

**Corequisite(s):** PSY 306.

**PSY 329 Research Methods in Organizational Psychology 4 Credits**

This course covers general area of research methods such as experimental and non-experimental methods, measurement, statistics, and preparation of reports for presentation and publication. In addition, research topics common in the area of organizational psychology such as worker motivation, job satisfaction, stress and burnout, communications in the workplace, productivity, decision-making, leadership style, and organizational structure will also be discussed. Students gain hands-on experience conducting empirical research.

**Prerequisite(s):** PSY 105 and PSY 201 or MSD 205.

**PSY 329L Research Methods in Organizational Psychology 0 Credits**

This course covers general area of research methods such as experimental and non-experimental methods, measurement, statistics, and preparation of reports for presentation and publication. In addition, research topics common in the area of organizational psychology such as worker motivation, job satisfaction, stress and burnout, communications in the workplace, productivity, decision-making, leadership style, and organizational structure will also be discussed. Students gain hands-on experience conducting empirical research.

**PSY 335 Research Methods: Human Cognitive Neuroscience 4 Credits**

Covers the interdisciplinary study of the nervous system integrating neurobiology, physiology, pharmacology, and psychology as explanations for both normal and pathological human behavior. Topics integrate molecular levels of analysis, such as neuron structure and function, neurotransmitters, action potentials, and receptors, with molar levels, such as sensory and hormonal processes, learning and memory, emotions, drug use, and biological rhythms. Introduces research techniques used to study the function of the nervous system and the neural bases of behavior in humans. Neuroanatomical, electrophysiological, pharmacological, and neuropsychological assessment techniques may be explored as part of laboratory or field research projects designed in collaboration with the instructor. Prerequisite(s): grade of "C" or better in PSY 201 and PSY 255 or permission of instructor.

**Corequisite(s):** PSY 335L.

**PSY 335L Research Methods: Human Cognitive Neuroscience Lab 0 Credits**

This lab is a co-requisite and must be taken with the corresponding course.

**Corequisite(s):** PSY 335.

**PSY 336 Research Methods: Animal Learning & Behavior 4 Credits**

Provides a comprehensive overview of the acquisition and modification of the behavior of animals, especially on laboratory strains of rodents and pigeons. Core topics include respondent and operant conditioning, animal cognition, observational learning, animal safety and welfare, single-subject and between-groups approaches to methodology, and the statistical analysis of the results of studies of behavior. The laboratory component of the course provides a comprehensive overview of animal handling and maintenance, animal welfare, and the recording of experimental results. Two substantial projects are undertaken; demonstration of a conditioned taste aversion and its effect upon the acquisition and extinction of an operant (bar press) response and subsequent discrimination and reversal learning. Results of both projects are written into APA-formatted reports. Prerequisite(s): a grade of "C" in PSY 201, PSY 225 or permission of instructor.

**Corequisite(s):** PSY 336L.

**PSY 336L Animal Learning and Behavior Lab 0 Credits**

This lab is a co-requisite and must be taken with the corresponding course.

**Corequisite(s):** PSY 336.

**PSY 339 Research Methods in Applied Behavior Analysis 4 Credits**

This upper-level laboratory course will provide students with in-depth study of the principles and applications of Applied Behavior Analysis. Students will examine behavioral principles, ethical considerations and real-life applications of ABA. Each student will design and implement a self-management plan to alter a behavior of their choosing. Prerequisite(s): PSY 105 and PSY 201, PSY 212.

**Corequisite(s):** PSY 339L.

**PSY 339L Research Methods in ABA Lab 0 Credits**

This lab is a co-requisite and must be taken with the corresponding course.

**Corequisite(s):** PSY 339.

**PSY 340 Research Methods: Group Dynamics 4 Credits**

Focuses on selected issues pertaining to group dynamics. Emphasizes an understanding of the personality and social factors that influence the functioning of unstructured and task-oriented groups. Students participate in a task group for the purpose of conducting a comprehensive research project on selected issues in group dynamics and the psychology of groups. The task group prepares an APA-style paper describing their research as well as an in-class presentation. Each student also submits a midterm and final written analysis of the interactional processes and development of the task group. Prerequisite(s): a grade of "C" in PSY 201 or permission of instructor.

**Corequisite(s):** PSY 340L.

**PSY 340L Group Dynamics Lab 0 Credits**

This lab is a co-requisite and must be taken with the corresponding course.

**Corequisite(s):** PSY 340.

**PSY 350 Research Methods: Developmental Psychology 4 Credits**

Focuses on one or more research areas in cognitive, personality, or social development. Includes an overview of major theoretical approaches to age-related change. Students review original research on selected aspects of behavioral change. The laboratory component of the course presents an overview of developmental research designs and methods focusing on the measurement of age-related change in psychological functioning. Students conduct field research projects designed in collaboration with the instructor and prepare an APA-style research report. Prerequisite(s): a grade of "C" in PSY 201 and PSY 230 or permission of instructor.

**Corequisite(s):** PSY 350L.

**PSY 350L Developmental Psychology Lab 0 Credits**

This lab is a co-requisite and must be taken with the corresponding course.

**Corequisite(s):** PSY 350.