

Department: PSYC

Course No.: 132

Credits: 3

Title: General Psychology I.

Contact: David B. Miller

Content Area: CA 3 Science and Technology

Catalog Copy: 132. General Psychology I

Course Information:

(a) Goals and Objectives: The overall goal of PSYC 132 is to introduce students to the “natural science” perspective of psychological science by examining mechanisms underlying behavior, both normal and abnormal, and especially how our understanding of those mechanisms continues to change in light of new research developments both within psychology and in related disciplines. Because the layperson's idea of “psychology” is typically narrow (and, due to the media and popular culture, is restricted to the social-science nature of the discipline, especially its clinical aspects), a related goal is to show students the breadth of ongoing research endeavors within the umbrella science known as “psychology” as well as our relationship to other disciplines, such as neuroscience, biology, chemistry, physics, and other areas. This exposure to intra- and interdisciplinary breadth is done with an eye towards examining detailed behavioral and cognitive mechanisms, thereby always directing the students' focus toward our own discipline while, at the same time, examining the intricacies underlying their own behavioral experiences to which they can already relate.

(b) Course Requirements: This three-credit course consists of two hours of lecture per week (315 to 330 students meet in a large lecture hall with their professor), and one hour of a “discussion/demonstration” lab (23 students per lab, taught by a TA). A third component of the course is experimental participation in ongoing research by faculty and graduate students in our Department (2.5 hours required plus up to an

additional 3.5 hours for extra credit). The lab provides students with early exposure to psychological research from the perspective of the experimenter, whereas experimental participation gives them research exposure from the perspective of the subject. These enriched, active-learning experiences are tied together by material in the lecture. Because of the large number of students in the lecture, exams are typically multiple-choice dispersed among two mid-terms and one final. Readings are assigned from textbooks as well as collections of selected articles. For the laboratory component, students write up to five lab reports based on the experiments that they conduct throughout the semester. This serves to introduce them to the scientific literature (because some reports entail small-scale literature searches) as well as guidance in scientific writing (because their reports must be written in the style specified by the Publication Manual of the American Psychological Association). The course grade is based on 75% lecture and 25% lab, with experimental participation counting as extra credit.

(c) Topics: The major topics covered in this course, and their relationship to other disciplines, the links to which we make explicitly in our lectures, are as follows:

1. History of Psychology (philosophy, physiology, history of science)
2. Research Methods (statistics, business—especially marketing)
3. Behavioral Genetics (molecular and cell biology, animal science, allied health, nursing)
4. Evolution (evolutionary biology, anthropology, animal science)
5. Nervous System (neuroscience, pharmacy, allied health, nursing, fine arts)
6. Behavioral Endocrinology (neuroscience, pharmacy, allied health, nursing)
7. Motivation, Emotion, Stress (neuroscience, allied health, family studies, pharmacy)
8. Sensation and Perception (physics, neuroscience, mathematics, computer science, philosophy, fine arts)
9. Learning, Memory, Cognition (neuroscience, computer science, philosophy, education, family studies)
10. Language (linguistics, communication sciences)

Meets Goals of Gen Ed: Goal 1 (Become Articulate): Students are first introduced to general psychological concepts and theories in the lecture, along with specific empirical examples related to those concepts that often bridge the gap between students' life experiences and how those experiences are being investigated by scientists; and, they then explore these concepts experimentally in the laboratory portion of the course (and, to some extent, by serving as participants in faculty research), which gives them a more “active learning” experience to complement the lecture material. We strive to give students a better understanding of actual behavioral mechanisms in relation to neuroscience and the physical sciences to replace their existing layperson's knowledge of behavior that they bring to this course by having been

exposed to “popular psychology” sources (e.g., media, books, etc.). The emphasis in PSYC 132 of psychology as integrated within the natural sciences, while still dealing with problems closely associated with social science (e.g., clinical, social, developmental aspects of psychology), provides students of a better understanding of behavioral mechanisms, how those mechanisms operate, how they can be modified, and how this knowledge relates to their own behavior and that of other individuals.

Goal 2 (Acquire intellectual breadth and versatility): The topics covered in PSYC 132 introduce students to a psychology that they have probably not encountered previously due to the popularization of the discipline via popular culture. The intellectual breadth and versatility of psychological science is made explicit by the manner in which the instructors link topics with other disciplines as well as daily life experiences. For example, “History of Psychology” is linked to physiology, philosophy, and history; “Research Methodology” is linked to statistics and business (especially marketing); “Biopsychology/Motivation” (e.g., neuronal mechanisms, genetic mechanisms, hormonal mechanisms, etc.) is linked with neuroscience, evolutionary biology, pharmacy, nursing, allied health, and physical therapy; “Sensation and Perception” is linked with physics, neuroscience, mathematics, computer science, philosophy, fine arts; “Learning/Memory/Cognition” is linked with computer science, philosophy, neuroscience, evolutionary biology, education, family studies; and “Language” is linked with linguistics, computer science, and communication science.

Goal 7 (Acquire working understanding of the processes by which they can continue to acquire and use knowledge): PSYC 132 emphasizes the changing nature of our understanding of behavioral and cognitive mechanisms by showing how advances in psychology and other natural sciences (e.g., neuroscience, physics of complexity) cause us to continually reevaluate these mechanisms in accord with technological advances and scientific discoveries. Our extensive use of current research discoveries in relation to psychological concepts illustrates to students the necessity of constant reevaluation of our current conceptions of behavior. This emphasis shows students how science actually proceeds—not as a discipline existing in isolation, but, rather, as one that is intimately related to other disciplines.

CA3 Criteria: GOAL 1 (EXPLORE AN AREA OF SCIENCE OR TECHNOLOGY BY INTRODUCING STUDENTS TO A BROAD, COHERENT BODY OF KNOWLEDGE AND CONTEMPORARY SCIENTIFIC OR TECHNICAL METHODS): Advances in brain imaging techniques, especially functional magnetic resonance imaging (fMRI), has greatly enhanced our understanding of certain (though not all) mechanisms underlying behavior and cognitive processes; and, new drugs are continually being synthesized for therapeutic intervention, which exert an impact on behavioral function by interacting with specific neural mechanisms that have only recently been identified. PSYC 132 places students at the forefront of the junction of modern behavioral science and neuroscience by showing them how technological advances have forwarded our understanding of how the brain processes, integrates, and regulates information. Students are thus introduced to how theories of behavior and cognition have been and are being reshaped by the ongoing integration of activity occurring across levels of organization (e.g., the genetic level, the neuronal level, the behavioral level, the environmental level, etc.)

GOAL 2 (PROMOTE AN UNDERSTANDING OF THE NATURE OF MODERN SCIENTIFIC INQUIRY, THE PROCESS OF INVESTIGATION, AND THE INTERPLAY OF DATA, HYPOTHESES, AND PRINCIPLES IN THE DEVELOPMENT AND APPLICATION OF SCIENTIFIC KNOWLEDGE): The scientific method and sound research methodology is discussed in various ways throughout the course as well as in a special section of the course. Many of the concepts that we want students to understand are illustrated in depth by examining contemporary empirical data, how those data relate to these concepts, as well as the limitations of the conclusions and/or generalizations that can be drawn from those data when examined in the context of particular experimental designs. Students gain a better understanding of scientific inquiry and the research process by actively practicing it in the laboratory portion of the course, as well as by their own participation in psychological experiments during the semester.

GOAL 3 (INTRODUCE STUDENTS TO UNRESOLVED QUESTIONS IN SOME AREA OF SCIENCE OR TECHNOLOGY AND DISCUSS HOW PROGRESS MIGHT BE MADE IN ANSWERING THESE QUESTIONS): Students are encouraged to understand that what we have yet to learn about behavioral and cognitive mechanisms (e.g., neurophysiological, neuroanatomical, computational, hormonal, environmental) is even more intriguing than what we know already. Throughout the semester, we emphasize how our understanding of behavior and cognition has been enhanced by advances in our own and other disciplines, and how these advances are ongoing and sometimes proceed at exponential levels. At the same time, we show them what our current limitations are in terms of understanding specific mechanisms and how our hope for future technological advances will, at some point, clarify existing gaps in our knowledge.

GOAL 4 (PROMOTE INTEREST, COMPETENCE, AND COMMITMENT TO CONTINUE LEARNING ABOUT CONTEMPORARY SCIENCE AND TECHNOLOGY AND THEIR IMPACT UPON THE WORLD AND HUMAN SOCIETY): Students bring to this course an existing curiosity about their own behavior and cognitive processes. By introducing them to actual mechanisms underlying these activities and how our understanding of those mechanisms continues to change as science proceeds, we arouse their curiosity even more, especially as we replace their lay-person's understanding of behavior with scientific understanding. We feel that this new-found knowledge about how and why they behave the way they do will foster continued curiosity in following future scientific developments in psychology and related sciences.

Role of Grad Students: On the Storrs campus, graduate student TAs are responsible for the one-hour demonstration/discussion (a.k.a. lab). They guide students through computer-based experiments (and other demonstrations) that relate to concepts covered in the lecture portion of the course, and students prepare lab reports throughout the semester based on these experiments. The TAs attend University-wide TA training workshops sponsored by the Institute for Teaching and Learning as entering graduate

students, as well as a full day of general TA training within the Psychology Department at the onset of each Fall semester. They are also trained by Dr. Jay Rueckl and his TA (who is already an experienced PSYC 132 lab TA) every Wednesday on how to conduct the lab for the upcoming week. Lab TAs are also encouraged to seek additional guidance from the professors who teach the lecture portion of the course. At the regional campuses, professors who teach the lecture portion of the course also teach the labs.