Lecture Contact Hours: 48-54; Homework Hours: 96-108; Total Student Learning Hours: 144-162

CUYAMACA COLLEGE
COURSE OUTLINE OF RECORD

PSYCHOLOGY 211- COGNITIVE PSYCHOLOGY

3 hours lecture, 3 units

Catalog Description
A general introduction to the principles of cognition. This course examines theoretical and research approaches to the study of cognitive neuroscience, perception, attention, memory, knowledge, visual imagery, language acquisition and development, problem solving and decision making.

Prerequisite
"C" grade or higher or "Pass" in PSY 120 or equivalent

Entrance Skills
Without the following skills, competencies and/or knowledge, students entering this course will be highly unlikely to succeed:
1) Distinguishing basic psychological terminology
   a. Identify terms used within psychology
   b. Distinguish sub-areas within psychology
   c. Identify different approaches
2) Apply research methodology
   a. Scientific method
   b. Identify basic types of research methods
   c. Delineate the different strengths and weaknesses of each method
   d. Apply research-based critical thinking
   e. Use and misuse of statistics
3) Use and distinguish basic information of each sub-area
   a. Psychobiology: neuron and brain, autonomic nervous system, genetics
   b. Sensation and perception: signal detection theory, the sense organs, organization
   c. Consciousness: sleep and dreams, hypnosis, drugs
   d. Learning: classical conditioning, operant conditioning, observation learning
   e. Memory: state theory, forgetting, biology of memory
   f. Thinking and language: problem solving, language development
   g. Intelligence: definition, theory, measurement, controversy

Course Content
1) History /Overview
   a. Historical influences on the study of cognition
   b. Research methods in cognitive psychology
   c. Paradigms in cognitive psychology
   d. Information processing, connectionist, evolutionary, and ecological approaches
2) Cognitive neuroscience
   a. Structure of the brain
   b. Localization of function
   c. Lateralization of function
   d. Brain-imaging techniques
3) Perception

a. Gestalt approaches to perception
b. Bottom-up processing
c. Top-down processing
d. Face perception
e. Direct perception
f. Disruptions in perceptions: Visual agnosia

4) Attention
   a. Selective attention
   b. Divided attention
   c. Automaticity and practice effects
   d. Neural underpinnings
5) Memory
   a. Working memory
      1. Traditional approaches: sensory memory and short-term memory
      2. Working memory
      3. Executive functioning
   b. Long-Term memory
      1. Aspects of long-term memory
      2. Subdivisions of long-term memory
      3. Semantic vs Episodic
      4. Implicit vs Explicit
      5. Declarative vs Procedural
   c. Levels of processing view
   d. Amnesia
   e. Memory errors
      1. Autobiographical memory
      2. Recovered/False memory debate
      3. Memory consolidation and reconsolidation
6) Knowledge representation
   a. Organizing knowledge
      1. Network models
      2. Adaptive control thought (ACT) models
      3. Connectionist models
   b. Forming concepts and categories
      1. Classic view
      2. Prototype view
      3. Exemplar view
      4. Schemata/scripts view
      5. Knowledge-based view
7) Visual imagery
   a. Coded in long-term memory
   b. Mental rotation and scanning
   c. Principles of visual imagery
8) Language
   a. Defining language
   b. The structure of language
      1. Phonology
      2. Syntax
      3. Semantics

4. Pragmatics

c. Language comprehension and production
   1. Speech perception
   2. Speech errors
   3. Sentence comprehension
   4. Story grammar
   5. Grecian maxims of conversation

d. Language and cognition
   1. Modularity hypothesis
   2. Whorfian hypothesis
   3. Neuropsychological views

e. Bilingualism

9) Problem solving
   a. Classical problems and general methods of solution
      1. Generate and test technique
      2. Means-end analysis
      3. Working backward
      4. Backtracking
      5. Reasoning by analogy
   b. Blocks to problem solving
      1. Mental set
      2. Incomplete or incorrect representations
      3. Lack of expertise
   c. Expert systems
   d. Finding creative solutions
      1. Unconscious processing
      2. Incubation
   e. Critical thinking

10) Reasoning and decision making
   a. Reasoning
      1. Deductive reasoning
      2. Inductive reasoning
      3. Everyday reasoning
   b. Decision making
      1. Setting goals
      2. Gathering information
      3. Structuring the decision
      4. Making a final choice
      5. Evaluating a decision
   c. Cognitive illusion in decision making
      1. Availability heuristic
      2. Representative heuristic
      3. Framing effects
      4. Anchoring
      5. Sunk cost effects
      6. Illusory correlations
      7. Hindsight bias
      8. Confirmation bias
      9. Overconfidence

Course Objectives
Students will be able to:
1) Explain the major areas of cognition, including neuroscience, perception, attention, memory, learning, language, and decision making;
2) Analyze the scientific approach to cognitive psychology and apply basic research methods, including research design, quantitative analysis, interpretation and reporting in APA format;
3) Demonstrate an understanding of the foundational experiments in cognitive psychology, including their primary results;
4) Apply the principles of cognitive psychology to real work issues;
5) Demonstrate an understanding of the differences between sensory, working, and long-term memory;
6) Understand the role of neuroscience in studying and assessing cognitive processes;
7) Describe and distinguish between the different theories of cognitive development.

Method of Evaluation
A grading system will be established by the instructor and implemented uniformly. Grades will be based on demonstrated proficiency in the subject matter determined by multiple measurements for evaluation, one of which must be essay exams, skills demonstration or, where appropriate, the symbol system.
1) One or more midterm exams evenly spaced throughout the semester.
2) A written final exam that is comprehensive in scope.
3) Exams may include both objective and essay questions.
4) One or more formal papers presented in American Psychological Association publication form on topics such as information processing in the frontal cortex.

Special Materials Required of Student
None

Minimum Instructional Facilities
1) Standard classroom facilities.
2) Library with appropriate journals.

Method of Instruction
1) Lecture.
2) Group discussion.
3) Demonstration.
4) Multimedia presentations.

Out-of-Class Assignments
1) Reading assignments from the text.
2) Library research and preparation of final draft paper(s) on topics such as understanding the visual markers of selective attention.

Texts and References
1) Required (representative examples):
   a. Gallotti, K. M. Cognitive Psychology In and Out of the Laboratory. 6 ed. Thousand Oaks: Sage, 2018. ISBN: 9781506351568
   b. Goldstein, E.B. Cognitive Psychology: Connecting Mind, Research and Everyday Experience. 5th ed. Concord: Cengage, 2019: ISBN-13: 9781337408288
   c. OER resources – Cognitive Psychology and Cognitive Neuroscience https://en.wikibooks.org/wiki/Cognitive_Psychology_and_Cognitive_Neuroscience Text is

available under the Creative Commons Attribution-ShareAlike License

d. OER Cognitive psychology College of the Canyons - Mehgan Andrade and Neil Walker Unless otherwise noted, the content in this textbook is licensed under CC BY 4.0 https://drive.google.com/drive/folders/1VkbR-B4V5WAyoM-73prusfJQq_hYk1Mq

2) Supplemental: Readings may be given to students to clarify the subject matter or present recent newsworthy events related to the course topic.

Student Learning Outcomes

Upon successful completion of this course, students will be able to:

1) Critically evaluate empirical research in the field of cognitive psychology.
2) Synthesize a body of cognitive psychology research findings.
3) Analyze the strengths and limitations of cognitive psychology based research designs.
4) Compare, contrast, and critique the major paradigms within cognitive psychology.
5) Evaluate decision making strategies to identify strengths and weaknesses associated with each.