

Name of Course <i>Cognitive Psychology</i>	
Lecturer: Assoc. Prof. Evdokia Christova-Slavcheva	
Teaching Assistant Nikolay Ratchev PhD	
Type of course Core	Degree of education Master's
Year of Education First	Semester First
ECTS 6	Hours 15 hours of lectures+ 15hours of seminars
Form of education Part-time and distance learning	Language of education English
Assessment Weekly quizzes; homework and a multiple-choice final exam	

Prerequisites

None

Course Objectives

- Introduce students to the main research paradigms in the field of cognitive psychology.
- Supply basic knowledge about the empirical tradition in studying cognitive processes, such as sensation and perception, memory, and mental representation of the knowledge.
- Introduce basic approaches to study of thinking (in problem solving, concept formation, decision-making, reasoning and judgment), attention and language.
- Link the separate areas of research, such as: perception and memory:
 - thinking, imagination, and creativity;
 - thinking and language;
 - perception, memory and intelligence.
- Develop critical thinking and writing skills.

Course requirements:

- Weekly quizzes.
- Homework.
- A multiple-choice final exam.

Lectures and seminars

1. COGNITION AS SUBJECT MATTER IN PSYCHOLOGY AND COGNITIVE PSYCHOLOGY AS A RESEARCH PARADIGM

Exploring cognitive psychology. Cognitive psychology defined. Philosophical antecedents of psychology: rationalism versus empiricism. Psychological antecedents of cognitive psychology: early dialectics in the psychology of cognition; from associationism to behaviorism; Gestalt psychology. Emergence of cognitive psychology. Early role of psychobiology; technology: engineering, computation, and applied cognitive psychology. Research methods in cognitive psychology: goals of research; distinctive research methods.

2. THE NATURE OF HUMAN SENSORY SYSTEM. MAIN FEATURES OF VISUAL PERCEPTION

From Sensation to Representation: Basics of Vision; Some Basic Concepts of Perception; Perceptual Constancies; Depth Perception; Approaches to Object and Form Perception. Theoretical Approaches to

Perception: Direct Perception; Bottom-Up and Top-Down Theories; Synthesizing Bottom-Up and Top-Down Approaches. Deficits in Perception: Agnosias and Ataxias; Anomalies in Color Perception; Akinetopsia and Achromatopsia.

3. ATTENTION AND CONSCIOUSNESS

The nature of Attention and Consciousness: Preconscious Processing; Controlled versus Automatic Processes; Habituation and Adaptation. Attention: Signal Detection; The Nature of Signal Detection; Vigilance; Search. Selected and Divided Attention: Basic Paradigms of Studying Selective Attention; Filter and Bottleneck Theories of Selective Attention; Attentional-Resource Theories of Selective Attention; Additional Considerations in Selective Attention; Divided Attention; Consciousness of Complex Mental Processes; Attention Deficit Hyperactivity Disorder. Cognitive Neuroscientific Approaches to Attention and Consciousness: Spatial Neglect; Attentional Systems; Using Event-Related Potentials to Measure Attention; A Psychopharmacological Approach.

4. MEMORY: MODELS AND RESEARCH METHODS

Tasks Used for Measuring Memory: Recall versus Recognition Tasks; Implicit versus Explicit Memory Tasks. Traditional Model of Memory. The Levels-of-Processing Model. An Integrative Model: Working Memory. Multiple Memory Systems. A Connectionist Perspective. Memory in the Real World. Exceptional Memory and Neuropsychology.

5. MEMORY PROCESSES AND STRUCTURES

Encoding and Transfer of Information: Forms of Encoding; Transfer of Information from Short-Term Memory to Long-Term Memory. Retrieval: Retrieval from Short-Term Memory; Retrieval from Long-Term Memory. Processes of Forgetting and Memory Distortion: Interference versus Decay Theory. The Constructive Nature of Memory: Autobiographical Memory; Memory Distortions; Context Effects on Encoding and Retrieval. Memory Development: Metacognitive Skills and Memory Development

6. REPRESENTATION AND MANIPULATION OF KNOWLEDGE

Mental Representation of Knowledge: External Representations: Pictures versus Words; Mental Imagery; Dual-Code Theory: Analogical Images versus Symbols; Propositional Theory. Mental Manipulations of Images: Mental Rotations; Image Scaling; Image Scanning. Synthesizing Images and Propositions: Epiphenomena and Demand Characteristics; Johnson-Laird's Mental Models; Neuropsychological Evidence for Multiple Codes; Visual versus Spatial Images. Spatial Cognition and Cognitive Maps: Rats, Bees, Pigeons, and Humans; Mental Shortcuts; Text Maps; Development of Visuospatial Skills.

7. REPRESENTATION AND ORGANIZATION OF KNOWLEDGE IN MEMORY

Organization of Declarative Knowledge: Concepts and Categories; Semantic Network Models; Schematic Representations. Representations of Procedural Knowledge. Integrative Models for Representing Declarative and Nondeclarative Knowledge: Combining Representations: ACT-R; Models Based on the Human Brain; Parallel Processing: The Connectionist Model; How Domain General or Domain Specific Is Cognition?

8. LANGUAGE: NATURE AND ACQUISITION

Properties of language: General Description; Fundamental Aspects of Language. Processes of Language Comprehension: Speech Perception; Semantics and Syntax. Language Acquisition: Stages of Language Acquisition; Nature and Nurture; Beyond the First Years; Animal Language.

9. LANGUAGE IN CONTEXT

Reading: Bottom-Up and Top-Down Processes: Perceptual Issues in Reading; Lexical Processes in Reading. Language and Thought: Differences among Languages; Bilingualism and Dialects; Slips of the Tongue; Metaphorical Language. Language in a Social Context: Speech Acts; Conversational Postulates; Gender and Language; Discourse and Reading Comprehension. Neuropsychology of

Language: Aphasia; Autism; Lesion Studies and Event-Related Potentials Research; Other Methods.

10. PROBLEM SOLVING AND CREATIVITY

The Problem-Solving Cycle. Types of Problems: Well-Structured Problems; Ill-Structured Problems and the Role of Insight. Obstacles and Aids to Problem Solving: Mental Sets, Entrenchment, and Fixation; Negative and Positive Transfer; Incubation. Expertise: Knowledge and Problem Solving: Organization of Knowledge; Innate Talent and Acquired Skill. Creativity: It's How Much You Produce; It's What You Know; It's Who You Are; It's Where You Are; All of the Above. Types of Creative Contributions.

10. DECISION MAKING AND REASONING

Judgment and Decision Making: Classical Decision Theory; Satisficing; Elimination by Aspects; Naturalistic Decision Making; Group Decision Making; Heuristics and Biases; Neuroscience of Decision Making. Deductive Reasoning: Conditional Reasoning; Syllogistic Reasoning; Linear Syllogisms; Further Aids and Obstacles to Deductive Reasoning. Inductive Reasoning: Reaching Causal Inferences; Categorical Inferences; Reasoning by Analogy; Development of Inductive Reasoning. An Alternative View of Reasoning: Neuroscience of Reasoning.

11. HUMAN AND ARTIFICIAL INTELLIGENCE

Measures and Structures of Intelligence. Spearman: The "g" Factor. Thurstone: Primary Mental Abilities. Guilford: The Structure of Intellect. Cattell, Vernon, and Carroll: Hierarchical Models. Information Processing and Intelligence. Alternative Approaches to Intelligence. Improving Intelligence: Effective, Ineffective, and Questionable Strategies. Development of Intelligence in Adults. Artificial Intelligence: Computer Simulations.

Reference

Sternberg, R. J. (2009). *Cognitive Psychology* (5th ed.). Wardsworth, Cengage Learning.

Standards of Academic Integrity

Generally, academic fraud and dishonesty include, but are not limited to the following categories: cheating, fabrication, plagiarism, multiple submissions, etc.

- **Cheating:** Using unauthorized notes, aids or information on an examination; altering a graded work prior to its return to a faculty member, allowing another person to do one's own work and submitting it for grading.
- **Fabrication:** Inventing or falsifying information, data or citation; presenting data gathered outside of acceptable professorial guidelines; failing to provide an accurate account of how information, data or citations were gathered; altering documents affecting academic records; forging signatures or authorizing false information on an official academic document, grade, letter, form or any other university document.
- **Plagiarism:** Submitting material that in part or whole is not one's own work; submitting one's own work without properly attributing the correct sources of its content.
- **Multiple Submissions:** Submitting identical papers or course work for credit in more than one course without prior permission of the instructor.

A breach of ethics or act of dishonesty can result in:

- failure of an entire course (blatant plagiarism, cheating on a test or quiz)
- academic suspension or expulsion from the university.