

## Syllabus Cognitive Psychology

Dr. Elena Molchanova, MD

**Office:** AUCA; Psychology Department

**Pre-requisites:** General Psychology or Introduction to Psychology for non-specialists

**Meeting times:** Tue 10.50; Wed 10.50

**Credit hours:** 3

**E-mails:** [molchanova\\_e@mail.auca.kg](mailto:molchanova_e@mail.auca.kg)

**Office phone:** 663309 (238)

**Required textbook:** Best, J. Cognitive Psychology. New York: West Publishing Co. 1989

*You will also find all necessary materials via on-line ([www.e-course.auca.kg](http://www.e-course.auca.kg))*

### Additional sources:

1. Richard P. Honeck. Introductory Readings for Cognitive Psychology
2. Carolyn P. Sobel. The cognitive sciences. An interdisciplinary approach. Mayfield Publishing Company. 2001
3. R. Reed Hunt / Henry C. Ellis. Fundamentals of cognitive psychology. 6-th edition. 1999

### On-line resources

1. <http://www.genebee.msu.su/journals/a-cog.html>
2. [http://virtualcoglab.cs.msu.su/Pubs\\_R.html](http://virtualcoglab.cs.msu.su/Pubs_R.html)
3. <http://psych.athabascau.ca/html/aupr/cognitive.shtml>
4. <http://www.zona.ru/directory/ukr/3464.html>

### Course description:

Cognitive psychology studies a variety of topics dealing with human cognition. What is perception, what is thought and how is that people are able to think and memorize something, what attracts and grabs our attention, do animals have their own language and consciousness... those and many other questions will be in a focus of our interest during our course activities. You will also learn how our cognition relates to brain structures and will be intrigued by the split brain phenomenon. Our course is not going to be extremely easy to deal with, but we really hope the process not to be only challenging, but also supportive.

### Course goals:

1. To create a model of the basic cognitive concepts, such as “attention”, “perception”, “imagination”, “memory”, “problem solving” and a variety of others.
2. Not only to ask good questions (“What is thought” is one of them), but also learn how to find a plenty of possible good answers.
3. To learn what is experimental design in cognitive psychology.

### Grading policy:

There will be a precise algorithm of how the grade will be calculated (look at course evaluation criteria). Taking into account that many of us are susceptible to Above Average Effect (overly positive view of the self), many people in the class will feel that they deserve a higher grade because you are so “close” to it. Do not ask us to change the grade; we are not going to do that. If you feel that the evaluation of your work was not fair or you noticed some scoring mistakes in your grade, you should bring these issues to our attention immediately! If your demands are reasonable, we will be happy to remedy mistakes. After all, social psychological research demonstrates that all people are susceptible to mistakes and biases. We would also like to remind you about the policy concerning the X grade. It will be given only in exceptional cases such as sickness and real family problems. This grade will not be given if you think that you are not getting the grade that you think you deserve.

### Missed classed and Make-up Exams

There will be only few satisfactory reasons for missing exams. You may miss exams when you are sick (you should present a reference letter from a doctor), you are presenting a paper at the conference, and you have major family problems. All make-up exams will be more difficult than the original exam and will be arranged at the end of the semester.

### Cheating policy

If we notice that you have submitted someone else’s work and presented it as your own, copied your answers from other exam papers or plagiarized from a published article, we will assign you an F in the course regardless of your performance in other portions of the course. We will hate to do that, but there will not be any exceptions to this rule.

### Cell Phones

It is always disturbing when cell phones and beepers go off during the class. You are supposed to turn them off before every class. If you are waiting an emergency call, please, warn us before the class.

## Grading system

|    |                                       |    |           |
|----|---------------------------------------|----|-----------|
| A  | 95-100% from maximum amount of points | C  | 74-77 %   |
| A- | 90-94 %                               | C- | 70-73 %   |
| B+ | 88-89 %                               | D+ | 68 - 69 % |
| B  | 84-87 %                               | D  | 64 - 67 % |
| B- | 80-83 %                               | D- | 60- 63 %  |
| C+ | 78-79 %                               | F  | 0-59 %    |

## Methods of evaluation

### 1. Attendance (32 points)

Attendance for this class is mandatory. I do not like when students go back and forth during the class. It distracts my attention. Please, do not do that. Try to solve all your problems before the class. I am not going to regard a person as being present in class if she/he left the classroom for more than 15 minutes.

### 2. Quizzes (60 points)

There will six multiple choice quizzes during the semester. All the quizzes will include the material covered in the textbooks, our seminars and lectures. All the quizzes will be in on-line format, so you'll have a choice of both time and place to pass them. You will be known your grade just after sending the results to the computer system.

### 3. Cognitive experiments (50 points)

Cognitive experiments are a part of your activity in this course. Some of scientific hypothesis (for example "attention is a highly selective process") need to be proved. You will be provided with examples of cognitive experiments and your task will be to repeat them. We are far from pushing you to create an experimental design by your own, but we won't be against if anybody really does that!

### 4. Your presentations in class (20 points).

At the very beginning of our course you should choose a topic for your class presentation (20-25 minute). The topic of your presentation should match our course topics.

*NB: Please, don't try to solve the global problems at once.*

### 5. Research paper -100 points

As part of the requirements of this course, you are to write a research paper. The purpose of the paper is to give you first hand experience with research in Cognitive Psychology. This means that we want you to read and digest **primary sources** (that is, original reports, **not** research summaries reprinted in books or magazines) of recent research. You may write one of two types of papers, a review paper or a research proposal.

#### Review Papers

For a review paper you are to review the literature in a well-defined area covered in this course. Reviews are usually written in an argumentative style. That is, try to persuade the reader that a particular point of view on your topic is correct. However, expository term papers are also acceptable. You should choose a topic that you find interesting. Most students have trouble narrowing their topic to a reasonable size, so choose a very focused area. Read 2-4 research articles on this topic, review the findings, and discuss the implications of the research you read. You should briefly describe the research hypotheses, the methods, and the results, and evaluate the conclusions of the studies. Be critical in your review, noting any problems in the methodology or conclusions in the reports. If there are inconsistent results reported in the several papers you review, try to resolve these inconsistencies.

#### Research Proposals

For a research proposal, you are to propose a "new" and original research project in a topic area covered by this course. You should read 2-3 articles in a particular area and plan a research project that goes beyond the research you review. Your proposal should include:

- (1) an introduction in which you review past research and state your hypothesis (approx. 2 pages),
- (2) a method section that describes in detail how you propose to carry out the experiment, and includes a sample of your research materials, and
- (3) a results and discussion section in which you describe (perhaps with a table or figure of fictional data) the results you expect to find and what the results mean in terms of the issues you raised in the introduction. Do not actually try to conduct your research, and make it clear that your paper is a proposal and not a report of research already conducted.

## All Two Papers

Your papers should be written in the APA style. However, you do not need to include an abstract. Use proper citation style (e.g., Burns, 2007), provide page numbers for direct quotes (e.g., Burns, 2007, p. 32), giving credit to the authors you have read, and properly referencing quotes. Be sure your papers include a complete reference section and that it is your own work.

The total length of the paper (including title and reference pages) should be between 8 and 12 pages.

Use refereed scientific journals that are primary sources (i.e., not review article of previous research). On-line publications of refereed journals are fine. Books, web pages, newspapers, and magazine articles may be used to supplement your primary sources, but do not substitute for the 2-3 journal articles you will need.

**Paper check list:**

- \_ Title page with your name
- \_ Paper in APA format
- \_ 8-12 pages in length, standard font and size (e.g., Times, size 12)
- \_ Reference page
- \_ Hard copies (reprints or photocopies) of all the source on your reference page.

**Additional Resources**

Some hints on finding a topic and choosing articles to read

Start with your textbook. Choose a topic in which you are interested (e.g., mental imagery). Look at the research described in your book on this topic. Narrow your topic to a well-defined question! (e.g., does bizarre imagery aid retention). Use an EBSCO search. to find a paper on this topic. Use the references in the first article and search for recent papers. In addition, your instructors may be able to direct you to an article. Once you have found one article, this article will contain references to other research articles in the area.

**Paper Topic Approval**

Before you spend a lot of time on your research paper, we would like to give you feedback on your choice of topic, and your choice of research articles. To gain approval for your paper, please fill in the following and return this form to us **before 5<sup>th</sup> week of studying.**

1. Paper title
2. Write two to three sentences describing the main topic or argument of your paper.
3. A list of 2-3 references that you plan to use in your paper. Please give complete specific references (i.e., Author, Date, Title, Journal, pages.)

**How your paper will be evaluated**

| Criteria  | Points   |          |
|---|----------|----------|
|   | Possible | Assigned |
| <b>1. Format: Overall format of paper:</b>  | 15       | _____    |
| Is it in APA format?  |          |          |
| Is there a reference page?  |          |          |
| Did you use proper citation style?  |          |          |
| Did you provide page numbers for quotes?  |          |          |
| <b>2. Writing Style:</b> Is the writing clear and easy to understand?   | 10       | _____    |
| Was the overall organization of the paper clear?  |          |          |
| Were sentences clearly and appropriately constructed?   |          |          |
| <b>3. Sources:</b> Were appropriate sources of information utilized (e.g. primary sources, current research)? | 10       | _____    |
| <b>4. Topic:</b> Was the topic relevant to the course material?   | 10       | _____    |
| Was the topic defined well enough to be covered in a term paper of this length?                               |          |          |
| <b>5. Thematic:</b> Did the paper have a clear theme? Was an argument developed and critically analyzed?      | 10       | _____    |
| <b>6. Integration:</b> Did you integrate the material found in different sources?                             | 15       | _____    |
| <b>7. Critical Evaluation:</b> Did you critically evaluate the reading material?                              | 15       | _____    |
| <b>8. Understanding:</b> Did you demonstrate an understanding of the topic area?                              | 15       | _____    |
| <b>Total:</b>   | 100      | _____    |

**5. Final exam – 100 points**

The final exam is cumulative and will include 100 multiple choice questions.

**Course schedule**

| <b>Week</b> | <b>Course topics</b>   |
|-------------|--|
| <b>1</b>    | Introduction to cognitive psychology. The notion of “cognition”, main topics of cognitive psychology. Introduction to the history of cognitive psychology. Experiment as a main research method in cognitive psychology. Two approaches in understanding cognitive processes and two main cognitive metaphors.                                   |
| <b>2</b>    | Attention and theories of attention. The notion of consciousness in cognitive psychology. Patterns of recognition.<br><i>Experiment: study of selective attention</i>  |
| <b>3</b>    | Higher cognitive processes in perception. The constructivist position and direct theories of perception. Prototypes. The perception of faces: facial attractiveness and facial asymmetry.<br><i>Experiment: study of self-schemata.</i>  |
| <b>4</b>    | Memory. Memory structures and memory processes. Short-term memory<br><i>Experiment: study of the capacity of short-term memory (experiment of Jacobson)</i>  |
| <b>5</b>    | Memory. Long-term memory. Organization of knowledge in semantic memory. Eyewitness memory (Elisabeth Loftus experiments)<br><i>Experiment: semantic encoding in eyewitness memory.</i>   |
| <b>6</b>    | Processes associated with memory: forgetting. Amnesia and types of amnesia. Clinical criteria for amnesia A and amnesia B types.<br>Cases of an extraordinary memory.<br><i>Experiment: study of proactive interference</i>  |
| <b>7</b>    | Problem solving and types of problems.<br><i>Experiment: how to solve bad-defined problems.</i>  |
| <b>8</b>    | Functional asymmetry of the brain. Rodger Sperry and his research of split brain patients.   |
| <b>9</b>    | Linguistics. The uniqueness of human language, characteristics of human language, approaches in the fields of linguistics. Noam Chomsky and his theory.<br>Aphasia. Clinical cases of different types of aphasia. Linguistics and brain. Polyglots. Aphasia of polyglots.<br><i>Experiment: language as a reflection of our self-perception.</i> |
| <b>10</b>   | Cognitive psychology of time and space. The notion of psychological time. Cognitive maps and time perception. Time perception in mental disorders.<br><i>Experiment: differences in perception of our “past”, “present” and “future”</i>   |
| <b>11</b>   | Human intelligence: what is it? The concept of emergence and location of intelligence.   |
| <b>12</b>   | Artificial intelligence: modeling the brain. “Robot intelligence”. Virtual reality. Fields of practical implications of virtual reality.   |
| <b>13</b>   | Animals’ cognition. Animals’ language  |
| <b>14</b>   | Cognitive development. Jan Piaget and Lev Vygotsky.  |
| <b>15</b>   | Cognitive approach to creativity.  |
| <b>16</b>   | Philosophical issues in cognitive science. Mind –body problem, determination and free will.<br>Epistemology: how we know what we “know”.   |

Cognitive psychology is the area of psychology that focuses on internal mental processes. Such processes include thinking, decision-making, problem-solving, language, attention, and memory. This field is often considered part of the larger field of cognitive science. This branch of psychology is also related to several other disciplines including neuroscience, philosophy, and linguistics. The core focus of cognitive psychology is on how people acquire, process, and store information. Cognitive psychology is the scientific study of mental processes such as "attention, language use, memory, perception, problem solving, creativity, and thinking". The origin of cognitive psychology occurred in the 1960s in a break from behaviorism, which had held from the 1920s to 1950s that unobservable mental processes were outside of the realm of empirical science. This break came as researchers in linguistics and cybernetics as well as applied psychology used models of mental processing to explain Cognitive psychology is a subdiscipline of psychology exploring internal mental processes. It is the study of how people perceive, remember, think, speak, and solve problems.[1]. Cognitive psychology differs from previous psychological approaches in two key ways. It accepts the use of the scientific method, and generally rejects introspection[2] as a valid method of investigation - in contrast with such approaches as Freudian psychology. Cognitive psychology is the scientific investigation of human cognition, that is, all our mental abilities "perceiving, learning, remembering, thinking, reasoning, and understanding. The term "cognition" stems from the Latin word "cognoscere" or "to know". Fundamentally, cognitive psychology studies how people acquire and apply knowledge or information. It is closely related to the highly interdisciplinary cognitive science and influenced by artificial intelligence, computer science, philosophy Learn about cognitive psychology, the branch of psychology that deals with motivation, problem-solving, decision-making, learning, memory, and more.Â Kendra Cherry, MS, is an author, educational consultant, and speaker focused on helping students learn about psychology. Learn about our editorial process. Kendra Cherry.