# Applied Cognitive Psychology

## Prof. Alessandro Antonietti

***COURSE AIMS AND INTENDED LEARNING OUTCOMES***

The course aims at providing a general theoretical framework and some key concepts regarding the principal cognitive processes so to support the notion that the analysis, assessment, and empowerment of such processes constitute a relevant area of psychological intervention.

At the end of the course students will have advanced knowledge of topics regarding cognitive psychology (experiments and research, methodologies, constructs), will be aware of fields in which this knowledge can be applied (via the understanding of examples of research-intervention), will be able to identify connections between various phenomena investigated by cognitive psychology and recognise how concepts and principles can be found in different environments and also how to design, in a nutshell, a psychological intervention aimed at revealing the target’s initial situation and/or the development of higher skill levels.

With regard to the so-called “Dublin indicators”, the course contributes to the intended learning outcomes for the study course in which it is placed in the following way:

*Making judgments*: The course presents different theoretical perspectives and highlights some critical issues about the topics addressed. Students' ability to personally re-elaborate and critically re-think their knowledge is honed through the analysis of applications to professional areas and topical issues;

*Communication skills*:the tasks based on the reformulation and application of concepts carried out during the course will promote the acquisition of an appropriate terminology and clarity of expression;

*Learning skills*: references to possible areas of psychological intervention addressed during the course allow students to reflect on their interests and attitudes and so develop an awareness for their future studies.

***COURSE CONTENT***

The course will consider the processes of understanding, reasoning, problem solving, decision making, creativity and innovation, and multi-modal communication. These processes will be examined in relation to their presence in everyday life as well as in learning, rehabilitation, and well-being promotion contexts in a lifespan perspective.

Course syllabus.

## Unit 0: The thinking mind

Cognitive dualistic models

Fast-and-frugal heuristics

A cognitive mind model

Application examples

## Unit 1: Inductive reasoning

## Inductive reasoning types and tasks

The factors influencing inductive reasoning

Fallacies in inductive reasoning

## Unit 2: Deductive reasoning

## Mental logic

### Errors in deductive reasoning

Mental models

## Unit 3: Probabilistic reasoning

## Errors in probability estimation and bias

Probability calculus and psychological mechanisms

The reconstruction of probability assessments

## Unit 4: Deontic reasoning

## The features of deontic reasoning

### The development of deontic reasoning

Regulations and context

## Unit 5: Counterfactual thinking

## Mental simulation

## Counterfactual reasoning

### The influence of emotions

Planning the future

Sources of error in counterfactual reasoning

## Unit 6: Critical thought

## The definition of critical thought

### Where and when to apply critical thought

The limits of critical thought

How to boost critical thought

## Unit 7: Decision-making

### Decision-making processes

Errors in decision-making

The factors influencing decision-making

How to improve decision-making

## Unit 8: Problem-solving

## Step-by-step problems

### Insight problems

Incubation and verbalisation

### Awareness and subconscious processes

## Unit 9: Creative thinking

The features of creative thinking

Dreamlike inspirations

Expanding and varying the flow of ideas

Combining ideas

Cognitive reinterpretations

Creative process control and flexibility

***READING LIST***

a) Reading list for the path based on the lecture contents and activities.

The student will prepare through the study of:

– lecture notes

– supplementary materials placed on the Blackboard platform

– the following book:

A. Gangemi-A. Antonietti-R.A. Fabio (edited by), *Manuale di psicologia del pensiero*, Il Mulino, Bologna, 2022

b) Reading list for the text-based path.

The student will prepare through the study of the following three texts:

A. Antonietti, *Psicologia del pensiero,* Il Mulino, Bologna, 2013.

M. Cantoia-A. Antonietti, *Mappe e storie. Dai processi cognitivi alla comunicazione*, PsyPrint, New York, 2015.

A. Cancer-A. Antonietti, *Il pensiero in azione. Applicazioni della psicologia cognitiva*, PsyPrint, New York, 2015.

***TEACHING METHOD***

The course will consist of lectures in the lecture room, combined with multimedia presentations and material made available on-line as well as practical work aimed at developing the ability to analyse specific applicative situations and consider constructs and develop new interventions. During the course, students will be asked to write reports on these activities, according to a set of instructions that will be made available step by step.

***ASSESSMENT METHOD AND CRITERIA***

For the option based on the lecture contents and activities, the progressive assessment of the students’ learning outcomes will be carried out not only through multiple-choice tests or open-ended questions to be taken at the beginning of some classes, but also the evaluation of the reports that students will have to write during and/or after the lectures. The assessment will take into account the following aspects:

- The understanding of the topics developed during the course (25% of the assessment)

- The pertinence of the links between the different topics (25% of the assessment)

- The use of critical thinking in the analysis and development of operational proposals (25% of the assessment).

- The use of an appropriate terminology and a coherent argumentation (25% of the assessment).

For the option based on textbooks, the assessment is based on an oral examination consisting of three types of questions concerning: a) acquisition of knowledge, b) understanding of concepts, c) ability to critically re-elaborate upon contents (for example, through critical analysis, by drawing links between topics, and application to real cases). The oral examination will be divided into two parts, each held by a different examiner in order to provide two independent evaluations. The results of each assessment, scored out of thirty points, will be summed up in the final mark.

Assessment criteria: the precision and completeness of the contents exposed (25% of the assessment), the use of an appropriate language (25% of the assessment), the relevance of the analysis and the links (25% of the assessment), the originality and implementability of project proposals (25% of the assessment).

***NOTES AND PREREQUISITES***

Students should have prior knowledge of basic psychological functions and psychological research methodology.

In case the current Covid-19 health emergency does not allow frontal teaching, remote teaching will be carried out following procedures that will be promptly notified to students.

Further information can be found on the lecturer's webpage at http://docenti.unicatt.it/web/searchByName.do?language=ENG or on the Faculty notice board.