



### NEUROECONOMICS

<b>Enrollment year</b>	2022/2023
<b>Academic year</b>	2022/2023
<b>Regulations</b>	DM270
<b>Academic discipline</b>	M-PSI/02 (PSYCHOBIOLOGY AND PHYSIOLOGICAL PSYCHOLOGY)
<b>Department</b>	DEPARTMENT OF BRAIN AND BEHAVIORAL SCIENCES
<b>Course</b>	PSYCHOLOGY, NEUROSCIENCE AND HUMAN SCIENCES
<b>Curriculum</b>	PERCORSO COMUNE
<b>Year of study</b>	1°
<b>Period</b>	1st semester (03/10/2022 - 21/12/2022)
<b>ECTS</b>	6
<b>Lesson hours</b>	36 lesson hours
<b>Language</b>	English
<b>Activity type</b>	WRITTEN AND ORAL TEST
<b>Teacher</b>	CANESSA NICOLA (titolare) - 6 ECTS
<b>Prerequisites</b>	A basic-level knowledge of the main subjects of cognitive neuropsychology is required.
<b>Learning outcomes</b>	<p>This course aims to provide a concise picture of available evidence in Decision neuroscience, i.e. of the cognitive processes and neural mechanisms underlying different facets of decision-making in the individual and social contexts. The close relationship between neuroeconomics and neuroethics will be addressed in terms of the neural correlates of choices characterized by social and moral, besides individual and economics, valence. The implications of the results provided by these disciplines for neuro-psychiatric and forensic settings will be also discussed.</p> <p>These goals will be pursued with an interdisciplinary approach aimed to establish connections between theoretical and empirical inputs from distinct but related research fields, such as psychology of judgment and</p>

decision-making, experimental economics, neuropsychology and cognitive neuroscience.

A section of the course will be devoted to a collective discussion of key topics within neuroeconomics, based on scientific papers previously analyzed at the individual level.

After the course, participants will be expected to be able to:

- discuss in-depth the main trajectories of research in neuroeconomics
- understand and critically examine the data reported in scientific papers relevant to the topics addressed by neuroeconomics
- develop proposals for original studies concerning the different sub-fields of neuroeconomics, which could be pursued with the typical techniques of cognitive neuroscience (neuroimaging, neurostimulation, lesional approach)

#### Course contents

- Cognitive neuroscience: aims and research techniques
- At the origin of neuroeconomics: the orbitofrontal cortex and the Somatic marker hypothesis
- The micro-economic bases of Decision theory: expected value and expected utility
- Psychology of judgment and decision-making: Prospect theory
- Neurophysiology of learning and motivation: processing of rewards, punishments and prediction errors in the meso-cortico-limbic dopaminergic pathway
- Anomalies and biases in probabilistic judgment and decision-making
- The neural bases of executive functioning and cognitive control
- The neural bases of anomalies and biases: drives, preferences and cognitive control
- “Social brain” and others’ understanding: social neuroscience and the neural bases of mentalizing and empathy
- Neural correlates of decision-making in social contexts
- Translational implications of neuroeconomics in neuro-psychiatric domains
- Neuroscience of pathological choice: gambling and addiction
- Neuroethics: neural bases of moral choices, and implications for forensic sciences

#### Teaching methods

The course is mainly based on lectures, but some hours will be devoted to the collective discussion of key topics within neuroeconomics, based on scientific papers previously analyzed at the individual level.

#### Reccomended or required readings

Neuroeconomics: Decision Making and the Brain, by Paul W. Glimcher, 2nd Edition; Editors: Paul W. Glimcher Ernst Fehr; eBook ISBN: 9780123914699; Hardcover ISBN: 9780124160088; Imprint: Academic Press, Published Date: 27th September 2013

Additional scientific papers will be provided for in-depth analyses on a voluntary basis.

After each lecture, slides will be sent to students by email.

#### Assessment methods

Both written and oral exams

**Further information**

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**Sustainable development  
goals - Agenda 2030**

[\\$bl legenda sviluppo sostenibile](#)