Neural-UA 302-001: Neuroeconomics
Instructor: Prof. Paul Glimcher
paulg@nyu.edu

Prof. Glimcher’s Assistant: Ms. Ruby Chen
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Class Meeting: Thursdays 4-6
Class Location: Rm 760 Meyer (2-4 Washington Place)
Professor’s Office Hours:

Pre-requisite: Behavioral and Integrative Neuroscience or Permission of the Instructor

Textbook:

Supplementary Text:

Neuroeconomics is a seminar-style upper level course covering the neuroscientific, economic and psychological foundations of human and animal decision-making. Although aimed mostly at juniors and seniors in neural science and psychology, the course is also appropriate for economists and Stern students interested in the biological foundation of choice. The course begins with a review of the independent economic, psychological and neuroscientific approaches to decision-making before moving into the core insights of modern neuroeconomics. Topic covered include: Subjective Value Theory and its Representation in the Brain, Intertemporal Choice, Neural Foundations of Game Theory, Consumer Decision-Making, Neural Foundations of Prospect Theory, and Efficient Coding as an Explanation for Choice Inconsistency. Typically, class periods begin with a 1h lecture by the Professor covering one or more textbook chapters. This is followed by student presentations of relevant original research articles and open discussion of those articles.

Grading is based on in-class presentations (2-30m presentations per student), a single 90m midterm given 2/3 of the way through the course, and a ~15-page final paper which is expected to expand on one of the presentations made by the student.

Schedule of Classes:

Jan 31
Introduction to Economics Theories of Choice: From Pascal to Game Theory
This class and the next will feature a 2h lecture and no student presentations.

Readings: Glimcher and Fehr (Textbook), Chapter: 1.
Foundations of Neuroeconomics, Chapter 3 – provided on NYU Classes.
Presentations for the First half of the class will be assigned this on this date.

Feb 7
Introduction to Psychological Theories of Choice: From Allais to Prospect Theory
This class and the next will feature a 2h lecture and no student presentations.
Readings: Glimcher and Fehr (Textbook), Chapter: 3.
Foundations of Neuroeconomics, Chapter 4 – provided on NYU Classes.

Feb 14
Anthropological Insights into Human Decision Making
Textbook: Chapter 7.

Student Presentations Begin:


Feb 21
The Neurobiological Representation of Decision Values in Choice
Textbook: Chapter 13.

Student Presentations:


Feb 28
Intertemporal Choice
Textbook: Chapter 10.

Student Presentations:
Kable, J.W. and Glimcher, P.W. (2010), An "as soon as possible" effect in human intertemporal


Mar 7
Game Theory
Textbook: Chapter 2; Chapter 25

Student Presentations:


Mar 14
Dopamine, Reinforcement Learning and the Construction of Value
Textbook: Chapter 15

Student Presentations:


Mar 21 – Spring Break

Mar 28
Advanced Reinforcement Learning
Textbook: Chapter 16

Student Presentations:

Apr 4 EXAM

Apr 11
Perceptual Decision Making
Textbook: Chapter 19

Student Presentations


Apr 18
Consumer Choice

Student Presentations:


Apr 25
Neuropharmacology of Human Decision Making (Oxytocin)
Textbook: Chapter 14


May 2
Other Regarding Preferences and the Neurobiology of Social Thinking
Textbook: Chapter 11.

Student Presentations


May 9 – Last Class
Neuro-Morality

Papers Due
No Student Presentations.