



Neuroeconomics

PSYC 2555-401 and NRSC 2273-401

Spring 2025

Wednesdays 1:45 PM to 4:45 PM

[Stephen Levin Building Auditorium](#)

Canvas Page: <https://canvas.upenn.edu/courses/1820730>

Instructor: Ibraheem Catovic, PhD

Email: icatovic@sas.upenn.edu

Office Hours: Wednesdays 12:30 PM to 1:30 PM, [Solomon Labs](#), Room C3A

TA	Email	Office Hours	Zoom Link
Fiona Lee	mcfiona@sas.upenn.edu	Thursdays 10 – 11	https://upenn.zoom.us/j/3747126095
Sunny Liu	sunnyliu@sas.upenn.edu	Fridays 10 – 11	https://upenn.zoom.us/my/sunnyliu
Yushi Zhou	yushizh@sas.upenn.edu	Tuesdays 10 – 11	zoom link

What is this course about?

This course will introduce students to Neuroeconomics, a field of research that combines economic, psychological, and neuroscientific approaches to study decision-making. The course will focus on our current understanding of how our brains give rise to decisions, and how this knowledge might be used to constrain or advance economic and psychological theories of decision-making. Topics covered will include how individuals make decisions under conditions of uncertainty, how groups of individuals decide to cooperate or compete, and how decisions are shaped by social context, memories, and past experience.

What background knowledge do I need before taking this course?

Students should have some background in at least one of the foundational disciplines of neuroeconomics, for example: (1) a course in neuroscience, such as Introduction to Neuroscience or Cognitive Neuroscience; or (2) a course in psychology, such as Judgment and Decision Making or Behavioral



Economics and Psychology; or (3) a course in economics, such as Introduction to Microeconomics. If you are uncertain about whether you have the appropriate background knowledge for this course, please talk to the professor.

What will I learn after successfully completing this course?

This course aims:

- To familiarize students with the methods and techniques that are used in neuroeconomics
- To survey some of the major questions neuroeconomists have asked and what answers they have found to these questions
- To develop student's ability to think critically about the strengths and weaknesses of research they encounter
- To enable students to think creatively about research, particularly in terms of formulating hypotheses and designing ways to test hypotheses
- To encourage students to apply the concepts from this course to gain a better understanding of themselves and their world
- To foster students' abilities to more effectively communicate and collaborate with others

What required texts and materials will I need?

There is **NO** textbook or material to purchase. All required readings will be posted on Canvas and will include tutorial introductions, popular science writing, and primary scientific articles. These will be most easily accessible from the Home page on Canvas.

What format will classes take?


We will employ a variety of instructional methods to enhance learning experiences in this course. In particular, we will apply the principles and practices of *team-based learning*, which requires you to collaborate in small teams of 4 or 5 to solve problems and help guide the learning of other team members. You will be assigned to a team at the beginning of the semester and remain with that team throughout the semester. Before each class, you will be expected to complete the assigned readings and review online tutorials, which provide structure for individual and team learning in that unit.

The motivation behind team-based learning is that it allows students to wrestle with challenging problems, balanced on the edge of just manageable difficulty, with the help of their peers. These activities also encourage deeper exploration of the "why" and "how" of the material, and allow for more frequent, often instantaneous and informal, feedback on your understanding. Working in a team to ask questions and solve problems is also often how we do research and how we function in the workplace. Learning how to function well in a team, to support and encourage others and to expect support and encouragement from



others, is a skill that will serve you well at Penn and beyond. Please remember that team success depends on a baseline in which everyone is welcomed, respected, and encouraged to participate. Neuroeconomics is an interdisciplinary field, and students come to this class from different disciplinary backgrounds with different skills and knowledge -- you all have something to learn from (and teach to) each other!

How will course communications be disseminated?

We will be using Canvas to post material and announcements. Log into Canvas and go to Account => Notifications, and in the pulldown menu "Settings for", select my course, check "Enable Notifications..." and set "Announcement" to Notify immediately 

How will my success be assessed?

Evaluations will be based on:

- (1) *individual readiness assurances (iRAs)* (**24%**). iRAs are taken individually at the beginning of each class and involve ~10 multiple choice questions concerning the readings and online tutorials for that unit. These indicate how ready the student is for deeper learning and what areas to review. Students will have 20 minutes to complete iRAs.
- (2) *team readiness assurances (tRAs)* (**16%**). Immediately after the iRA, the same questions are answered as a group on a tRA. These will be conducted on scratch cards that provide immediate feedback. Groups will have 20 minutes to complete tRAs.
- (3) *team application activities (tAAs)* (**40%**). Following the tRA, these activities require teams to use their collective knowledge to collaborate on solving problems, creating ideas, or evaluating scientific information. Students will have the remainder of class after iRAs and tRAs to complete tAAs.
- (4) *group presentations* (**20%**). The last two weeks of the semester will be dedicated to group presentations of a paper of the group's choosing and professor's approval. Additional details will be provided later during the semester.

There will be 10 classes with iRAs, tRAs and tAAs. To account for extenuating circumstances, unexcused absences, or even a bad day, the two lowest iRAs, tRAs and tAAs will be dropped for each student. **Only group members present for class will receive credit for that tRA and tAA.** The dropped iRAs, tRAs and tAAs do **NOT** have to occur in the same class. Students who will require a greater number of absences should contact the professor so we can discuss your ability to complete the course.

Each student's final grade will consist of their 8 highest iRAs, tRAs, tAAs, and a group presentation. Each iRA will contribute 3%, each tRA will contribute 2%, and each tAA will contribute 5% to the final grade. The remaining 20% will be determined by the group presentation.



What are the course policies?

We expect students to complete the appropriate readings and online tutorials before class and come to class prepared to learn. Given the nature of team-based learning, activities cannot be made up. We know that there are occasionally times when students cannot attend class due to illness, religious observance, athletic events, etc. In these cases, students must complete a Course Action Notice to inform us of your absence. You are responsible for asking your teammates what you missed.

During iRAs and tRAs, all electronic devices should be closed and put away. iRAs are assessments that must be completed individually and independently. Anyone caught attempting to cheat will receive a zero on that iRA and repeat offenders will be subject to further discipline. tRAs will be completed in groups as a single submission but no other aids are permitted. **Students will have 20 minutes to complete iRAs and another 20 minutes to complete tRAs.**

During tAAs, laptops and tablets are welcome and even encouraged to aid students working together on the activities and readings. Groups may ask questions to the teaching team. The use of AI is **NOT** recommended when completing tAAs for two reasons. First, it will not encourage teamwork and problem solving, critical learning goals of this course. Second, AI makes mistakes, especially with the multifaceted and nuanced questions on tAAs. Groups will have plenty of time to deliberate and complete tAAs without yielding to shortcuts like AI. It is therefore not even a score-maximizing best strategy to use AI. **The completed tAA must be uploaded to Canvas by the end of class, no later than 5:00 PM EDT.** Any late tAAs will receive a zero.

If you have a question about material or an assignment, please look for the information on canvas, and if it's not answered, please post the question in the appropriate discussion thread for that class. Many students often have similar questions, and this way the teaching team can answer the question in a way that's communicated to the entire class.

When should I come to office hours?

Students should come to office hours to introduce themselves, to ask questions about course content, or to talk about stuff. If your class schedule conflicts with office hours, email the TA or instructor to schedule another time to meet.

Relevant College Policies (thanks to Caroline Connolly for compiling these)

It is important that you have the resources you need to be able to focus on learning in this course. This includes both the necessary academic materials, as well as taking care of your day-to-day needs.

- Students experiencing difficulty affording the course materials in this course, or any other course, should reach out to the Penn First Plus office (pennfirstplus@upenn.edu).
- Students who are struggling to afford sufficient food to eat every day and/or lack a safe and suitable space to live should contact Student Intervention Services (vpul-sisteam@pobox.upenn.edu).
- Students may also wish to contact their [Financial Aid Counselor](#) or Academic Advisor about these concerns.

You are welcome to notify me if any of these challenges are affecting your success in this course, as long as you are comfortable doing so – I may have resources to support you.

SNF Paideia Program

This course is part of the Stavros Niarchos Foundation (SNF) Paideia Program, which serves as a hub for civic dialogue in undergraduate education at Penn. SNF Paideia designated courses examine the theory and practice of dialogue across differences from diverse disciplinary and interdisciplinary perspectives. They also explore the interplay among dialogue, citizenship, service, as well as individual and community wellness. Collectively, they are intended to provide students with the scholarly and applied knowledge, skills, ethical orientations, and experiences necessary for integrating their personal, professional, and civic identities – that is, for “educating the whole person.” You can get more involved at <https://snfpaideia.upenn.edu>.

Code of Academic Integrity

You must familiarize yourself with the Code of Academic Integrity in the University of Pennsylvania. It is your responsibility to ensure your behavior does not violate this code. You must observe the policies regarding various forms of academic dishonesty. The following statement about academic dishonesty has been provided by the University of Pennsylvania, “Activities that have the effect or intention of interfering with education, pursuit of knowledge, or fair evaluation of a student’s performance are prohibited.” Academic dishonesty will not be tolerated and may be handled by the Center for Community Standards & Accountability. More information is available here: <http://www.upenn.edu/academicintegrity/>

Any behavior inconsistent with the course policies will be considered a violation of Penn’s [Code of Academic Integrity](#), and suspected violators will be reported to the Center for Community Standards & Accountability. Please contact me if you have any questions about this policy.

Student Financial Services

Any student may consult with Student Financial Services to find out what support they are eligible to receive to cover course costs or other items that ensure their health, safety, and secure learning environment. All reading materials for this course are accessible via Canvas without cost. There are no other costs associated with this course. If there is any cost I am unaware of, please let me know.

Weingarten Center: (includes info about [academic accommodations](#))

The Weingarten Center offers a variety of resources to support all Penn students in reaching their academic goals. All services are free and confidential. To contact the Weingarten Center, call 215-573-9235. The office is located in Stouffer Commons, 3702 Spruce Street, Suite 300.

Academic Support

Learning consultations and learning strategies workshops support students in developing more efficient and effective study skills and learning strategies. Learning specialists work with undergraduate, graduate, and professional students to address time and project management, academic reading and writing, note-taking, problem-solving, exam preparation, test-taking, self-regulation, and flexibility.

Undergraduates can also take advantage of free on-campus tutoring for many Penn courses in both drop-in and weekly contract formats. Tutoring may be individual or in small groups. Tutors will assist with applying course information, understanding key concepts, and developing course-specific strategies. Tutoring support is available throughout the term but is best accessed early in the semester. **Disability Services**

The University of Pennsylvania is committed to the accessibility of its programs and services. Students with a disability or medical condition can request reasonable accommodations through the Weingarten Center website. Disability Services determines accommodations on an individualized basis through an interactive process, including a meeting with the student and a review of their

disability documentation. Students who have approved accommodations are encouraged to notify their faculty members and share their accommodation letters at the start of each semester. Students can contact Disability Services by calling 215-573-9235.

[The Marks Family Writing Center](#)

Provides expert help in writing for undergraduate students. Undergraduate students are able to schedule face-to-face or online appointments. All appointments must be scheduled ahead of time. Please email tutorhelp@writing.upenn.edu for assistance.

[HELP Line](#)

This is a 24-hour-a-day phone number for members of the Penn community who are seeking time sensitive help in navigating Penn's resources for health and wellness. Any member of the Penn community can utilize this service by calling 215-898-HELP. Calls will be answered 24 hours a day, 7 days a week by Division of Public Safety professionals trained in mental health referrals by staff from Counseling and Psychological Services (CAPS).

Students who are dealing with the complex emotional challenges of university life can use the HELP Line to receive information and referrals to the many health and wellness resources at Penn, including CAPS, Student Health Service, Student Intervention Services, Public Safety, and others. They may also call on behalf of a friend or acquaintance. If you or someone you know needs help, please call the HELP Line at 215-898-HELP. <https://www.publicsafety.upenn.edu/help-line/>

[Student Health and Counseling](#)

College can be challenging. Student Health and Counseling (formerly SHS and CAPS) is the primary care and psychological care division of [Wellness at Penn](#). "Our medical and counseling centers are designed to provide high-quality, compassionate care for undergraduate, graduate, and professional students during their academic journey. Student Health and Counseling is committed to providing safe, accessible, cost-effective, culturally-sensitive, and student-focused care. Our team provides care for acute and chronic health problems, preventative health services, as well as mental health and counseling, crisis management, and consultations."

- Medical Care Office: 215-746-3535, 3535 Market Street, Suite 100, Philadelphia, PA 19104
- Counseling Office: 215-898-7021, 3624 Market Street, First Floor West, Philadelphia, PA 19104(link is external)
- Call 215-746-WELL (9355) for information, support, to schedule an appointment, and to speak with an on-call provider.

[CaseNet](#)

CaseNet is an academic support team in the College Office charged with providing a centralized response to all College students in academic difficulty (www.college.upenn.edu/casenet). CaseNet can be reached at col-casenet@groups.sas.upenn.edu or by calling 215-898-6341.

Cases referred to CaseNet include:

- Students who are ill or otherwise prevented from attending class for more than five days.
- Students in serious academic difficulty.
- Students who are hospitalized or who have other kinds of acute problems (victim of crime, etc.) that interrupt their normal schedule.
- Students who are experiencing personal or family concerns significant enough to interfere with their academic work or to impinge on those around them, including a death in the family.

[Reach-A-Peer Helpline](#)

The Reach-A-Peer Helpline is a peer help line established in 1996 to provide peer support, information, and referrals to any and all students of the University of Pennsylvania. The service is open to all students who wish to share a problem, are in need of information, or just want to talk to someone about anything on their mind. RAPLine offers two services:

- Texting: Our text service is available 24/7. Send a message to 215-515-7332 to connect anonymously with a RAP-Line peer supporter.
- Helpline: Our phone line is available every night while classes are in session (except holidays) from 9 pm to 1 am. Reach us at 215-573-2727.

In addition, there are various a range of other support resources on campus such as resident advisers, faculty members living on campus, [academic advisors](#), and undergraduate advisers in each program of study. The [Office of the Chaplain](#) is also helpful.