

Syllabus: Cognition and Decision Making

Fall 2023

01:185:301

Instructor Information

Instructor

Joseph Sommer

Email

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Office Location & Hours

Busch Psychology/RuCCS A108 or
via Zoom, by appointment

Recitation Instructor

Joseph Sommer

General Information

Lectures Meet

Mon/Thurs, 12:10-1:30, LIVI, Beck Hall, Room 253

Recitation Sections Meet

Section 01: Wed, 10:35-11:30am, LIVI, Lucy Stone Hall, Room A142

Section 02: Tues, 10:35-11:30am, LIVI, Tillett Hall, Room 105

Pre-requisites

Cognitive Science: A Multi-disciplinary Introduction (01:185:201)

Required Materials

There is no assigned textbook for this course. Readings for each week are available on Canvas. Additional supplemental readings are also available on Canvas but are not mandatory.

Description

This course will survey the major research topics in the psychology of judgment and decision-making. Throughout the semester, we will be mindful of three questions about decisions-making (1) How *should* we make decisions? I.e., how should an ideal decision-maker seek out information, weigh options, and select the alternative that best meets their goals? (2) How do people actually make decisions in the real world? Research suggests that questions (1) and (2) often have different answers. That is, people often fail to make optimal decisions. These findings have important implications for our understanding of whether humans are or are not rational. It also suggests that there is room for improvement in human decision-making. Question (3), therefore, asks how we can improve our decisions.

The course is divided into three modules. The first module is concerned with *epistemic rationality* - or forming true beliefs - which are often a pre-requisite for making appropriate choices. The second module explores the gap between belief and decisions: in cases like procrastination, we know what the correct choice is, but may fail to act in accordance with our beliefs. In this module, we will be interested in

instrumental rationality, or the ability to achieve our goals. Finally, in module three, we will discuss methods of improving decision-making which may enable us both to form more accurate beliefs and to better achieve our goals.

Course Learning Objectives

The primary objectives of this course are:

- To familiarize students with the major findings in the science of decision-making
- To introduce students to the major controversies and theoretical positions on human decision-making, including debates over whether people are rational or irrational
- To provide practical tools for improving real-world decisions

Grading

Grades will be determined based on the following:

- **Exams:** There will be three exams, each worth 100 points. The lowest exam score will be dropped.
- **Attendance:** Attendance will be taken in both lecture and recitation. Attending each session is worth 1 point, for a total of 40 points available for perfect attendance throughout the semester (27 lectures and 13 recitations).
- **Weekly Reflection Post:** There is a (short) reading assigned each week. By 11:59 pm on Monday night, you will submit a brief reflection post to Canvas. This post should *either* highlight a point in the reading you found particularly interesting *or* identify something you found confusing or difficult to understand. Posts should consist of 2-3 sentences comprising: (1) the point you identify; (2) an explanation of why you found the point interesting/hard to follow.

Reflection posts are worth 4 points each, for a total of 52 points. Posts may be turned in at any point during the semester, however, late assignments will be worth fewer points. Specifically, a late post submitted within the week it is due [Tuesday morning - Saturday night] will earn a maximum of 3 points and posts submitted more than one week late can earn a maximum of 2 points.

- **Extra Credit:** Upon request, there will be 1 bonus assignment per module. Each assignment will be worth 4 points.

Final grades are calculated as follows:

Total possible points: 292 (+ 12 extra credit)

A = 263 and above

B+ = 248 - 263

B = 233 - 248

C+ = 218 - 233

C = 203 - 218

D = 189 - 203

F = below 189

Changing Grades

I wish all of you the best in your studies, however, changing grades in response to individual requests is not equitable for other students in the course. For this reason, requests for grade changes will not be considered (unless, of course, an error was made in the calculation of your grade). Final grades will be based on the total points accrued over the semester, as described above. With this in mind, I will of course be sensitive to any special circumstances that may arise.

Course Schedule By Week (see below for detailed schedule)

Week	Topic	Assigned Reading(s)
Week 1	Introduction	Over (2004)
Module 1: Epistemic Rationality - Forming True Beliefs		
Week 2	Normative Theories	Stanovich (2010)
Week 3	Descriptive Theories	Kahneman & Tversky (1984)
Week 4	Heuristics and Biases	Tversky & Kahneman (1974); Evans (2003)
Week 5	The Great Rationality Debate™	Gigerenzer (2008)
Week 6	Exam 1	N/A
Module 2: Instrumental Rationality - Achieving Goals		
Week 7	Game Theory	Chaudhuri (2009)
Week 8	Behavioral Economics	Soman (2004)
Week 9	Intertemporal Choice & Procrastination	Berns, Laibson, & Loewenstein (2011)
Week 10	Morality & Emotions	Wilson & Gilbert (2005)
Week 11	Exam 2	N/A
Module 3: Prescriptive Theories - Improving Decision-Making		
Week 12	Learning	Simon (1993)
Week 13	Debiasing: Cognitive Approaches	Milkman et al. (2009)
Week 14	Debiasing: Technologist Approaches	Hertwig & Grüne-Yanoff (2017)
Week 15	Final Exam Review	N/A

Detailed Schedule:

Module 1: Epistemic Rationality - Forming True Beliefs

Week 1	Introduction
Reading:	Over (2004)
9/6	No recitation this week
9/7	Cognition, Decisions, and Rationality
Week 2	Normative Theories
Reading:	Stanovich (2010)
Supplemental Reading:	Baron (2004)
9/11	Expected Utility Theory
9/12 + 9/13	Recitations meet
9/14	Bayes' Rule
Week 3	Descriptive Theories
Reading:	Kahneman & Tversky (1984)
Supplemental Reading:	Barberis (2013)
9/18	Anomalies and Framing Effects
9/19 + 9/20	Recitations meet
9/21	Prospect Theory
Week 4	Heuristics and Biases
Readings:	Tversky & Kahneman (1974); Evans (2003)
Supplemental Reading:	Evans & Stanovich (2013)
9/25	Heuristics and Biases
9/26 + 9/27	Recitations meet
9/28	Dual-Process Theories of Cognition
Week 5	The Great Rationality Debate™
Reading:	Gigerenzer (2008)
Supplemental Readings:	Simon (1983); Kahneman & Tversky (1996)

10/2	Fast and Frugal Heuristics
10/3 + 10/4	Recitations meet
10/5	Bounded Rationality
Week 6	Exam 1
Reading:	N/A
10/9	Review
10/10 + 10/11	Recitations meet
10/12	Exam 1

Module 2: Instrumental Rationality - Achieving Goals

Week 7	Game Theory
Reading:	Chaudhuri (2009) - you can skip Boxes 1.1-1.3
Supplemental Reading:	Colman (2003)
10/16	Game Theory
10/17 + 10/18	Recitations meet
10/19	Information, Signals, and Power
Week 8	Behavioral Economics
Reading:	Soman (2004)
Supplemental Reading:	Thaler (1990)
10/23	Behavioral Game Theory
10/24 + 10/25	Recitations meet
10/26	Mental Accounting
Week 9	Intertemporal Choice & Procrastination
Reading:	Berns, Laibson, & Loewenstein (2011)
Supplemental Reading:	Schelling (1980)
10/30	Temporal Discounting
10/31 + 11/1	Recitations meet
11/2	Procrastination

Week 10	Morality and Emotions
Reading:	Wilson & Gilbert (2005)
Supplemental Reading:	Lerner et al. (2015)
11/6	Moral Decisions
11/7 + 11/8	Recitations meet
11/9	Effects of Emotions on Decision Making
Week 11	Exam 2
Reading:	N/A
11/13	Review
11/14 + 11/15	Recitations meet
11/16	Exam 2
Module 3: Prescriptive Theories - Improving Decision-Making	
Week 12	Learning
Reading:	Simon (1993)
Supplemental Reading:	Gonzalez et al. (2003, pp. 591-600); Schoemaker & Tetlock (2016)
11/20	Decisions From Experience
11/21 + 11/22	Recitations meet
11/23	Thanksgiving - No Class
Week 13	Debiasing: Cognitive Approaches
Reading:	Soll, Milkman, & Payne (2015)
Supplemental Reading:	Larrick (2004)
11/27	Superforecasters and The Wisdom of Crowds
11/28 + 11/29	Recitations meet
11/30	Debiasing
Week 14	Debiasing: Technologist Approaches
Reading:	Hertwig & Grüne-Yanoff (2017)
Supplemental Reading:	Thaler & Sunstein (2009)

12/4	Nudges, Boosts, and Other Tools
12/5 + 12/6	Recitations meet
12/7	Critical Thinking, Fallacies, and Misinformation
Week 15	Final Exam Review
12/11	Review
12/12 + 12/13	Recitations meet

University Policies

Disability Services

Rutgers welcomes students with disabilities into all of the University's educational programs. To request accommodations, students must follow the procedures of the Rutgers Office of Disability Services. More information can be found at ods.rutgers.edu.

Academic Integrity

Rutgers University takes academic dishonesty extremely seriously. All students are expected to maintain the highest level of academic integrity. You can familiarize yourself with the University's policy on academic integrity at academicintegrity.rutgers.edu.

Religious Observances

University policy requires that students not be penalized for absences related to religious observance.

Counseling, ADAP & Psychiatric Services (CAPS)

(848) 932-7884 / 17 Senior Street, New Brunswick, NJ 08901/

CAPS is a University mental health support service that includes counseling, alcohol and other drug assistance, and psychiatric services staffed by a team of professional within Rutgers Health services to support students' efforts to succeed at Rutgers University. CAPS offers a variety of services that include: individual therapy, group therapy and workshops, crisis intervention, referral to specialists in the community and consultation and collaboration with campus partners.

(<http://www.rhscaps.rutgers.edu/>)

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