

# SYLLABUS

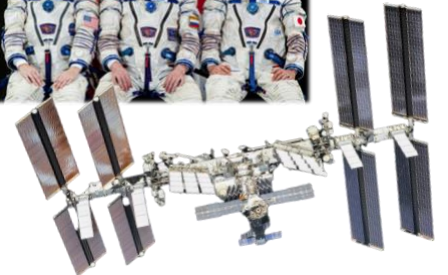
## ADVANCED TOPICS IN COGNITIVE SCIENCE: DECISION MAKING / BEHAVIORAL GAME THEORY – REASON, COOPERATION, AND CONFLICT

01:185:414 (Section 01, Index 07050)

Fall 2023

Note: This course partially overlaps with a previously offered course, *412: Evolution, Cognition, and Culture*. Please do not enroll if you have taken *412: Evolution, Cognition, and Culture*.

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## COURSE OVERVIEW

### Logistics

Main page: <https://canvas.rutgers.edu>

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

Lectures:

- Mondays and Wednesdays, 3:50pm – 5:10pm.
- In-person at Room 206, Allison Road Classroom, Busch Campus.

Instructor: Paul Robinson

- Email: [paul.d.robinson@rutgers.edu](mailto:paul.d.robinson@rutgers.edu) (response within 1 working day).
- Office hours: Wednesdays 2:30pm – 3:30pm (A115, Psychology Building) and by appointment.

### Course description

The intellectual abilities and cooperative tendencies of humans are outliers among animal species. Yet, paradoxically, human minds are also highly susceptible to cognitive biases, and we often find ourselves embroiled in destructive conflicts. Why do our minds possess such peculiar features? Can studying how they came to be this way help us “hack” our minds?

Various answers to these questions have caught the public imagination. Some argue that evolutionarily ancient neural structures, sometimes colloquially referred to as our “reptilian brain”, exert a “primal” influence on our decisions and hence we should study animal behavior for insights about human instincts. Others argue that even our most evolutionary modern neural structures amount to “stone age minds”, suggesting instead that we should study hunter-gatherer societies to understand the “natural” environments our minds are “designed” to operate in. But do such explanations have any scientific merit?

Join us on an intellectual expedition through the realms of cognitive archaeology, anthropology, psychology, and neuroscience, to unravel the intricate web of factors that have shaped the human mind. In our quest for answers, we will focus on *social* aspects of decision-making and *evolutionary* explanations of the motivations, intuitions, and heuristics, that influence our decisions. Along the way, we critically engage with broad theoretical paradigms such as evolutionary game theory and error management theory, as well as hypotheses such as optimal foraging theory, kin selection theory, costly signaling theory, significance-quest theory, and the recently formulated social-interactionist theory of reason.

## Learning Goals

Upon successful completion of the course, students will be able to:

- i. Articulate ways in which cognitive archaeology and cognitive anthropology contribute to the interdisciplinary nature of cognitive science and explain how authors in these fields distinguish their work from research in the field known as “evolutionary psychology”.
- ii. Summarize and critically evaluate research papers from a wide range of fields, such as primatology, paleoanthropology, cognitive archaeology, and anthropology.
- iii. Outline the evolutionary history of *Homo sapiens* and its significance for understanding human cognition.
- iv. Explain some of the similarities and differences between the cognitive abilities of contemporary humans and other animals.
- v. Describe cognitive biases, identify those biases in real-world cases, and explain theories concerning their evolutionary origins and functions.

## HOW THIS COURSE WORKS

### Mode of delivery

This course is fully in-person.

### Attendance policy

Students are expected to attend all classes. If you expect to miss one or two classes, please use the University absence reporting website - <https://sims.rutgers.edu/ssra/> - to indicate the date and reason for your absence. An email will automatically be sent to me from this system. Please provide timely notification about necessary absences for religious observances.

Note that if you must miss classes for longer than one week, you should contact a dean of students to help verify your circumstances.

To further incentivize attendance, I will take roll call and students who attend can earn a bonus of up to 2% on their final score.

### Electronic devices

You are permitted to have your phones out to check for important messages but please do not use phones to browse the internet or record classroom conversations. You may use a laptop for class-related activities only. Typically, at various points during class I will ask you to close your laptops.

## Course requirements

- **Reading quizzes:** Each week, by Monday at 3:30pm, you will use Canvas to complete a brief multiple-choice quiz on the reading for that week. Each quiz will open after class on the previous Wednesday, thus giving you five days to do the reading.
- **Lecture quizzes:** Each week, by Wednesday at 11:59pm, you will use Canvas to complete a brief multiple-choice quiz on the lectures for that week. Each quiz will open after class on Wednesday.
- **Module reflection posts:** This course is divided into six two-week modules. By 11:59pm on Fridays that fall at the end of a module you will submit a reflection post to a discussion board on Canvas. These posts will be used for class discussion and may also help you choose a topic for your final paper. Your reflection should consist of four sentences: (1) state the most interesting thing that you learned; (2) explain why you find it interesting; (3) ask a question concerning something you didn't understand or are unsure about; (4) explain why you didn't understand or why you are unsure.
- **Writing assignments:** You will submit four short writing assignments. Further details will be provided in Canvas (Files > Assignments). The first three are reflection pieces and the final one is designed to help you with your final paper:

Assignment A: Critically discuss a claimed “evolutionary mismatch” or “adaptive lag” of your choosing that has been discussed either inside or outside academia.

Assignment B: If you could travel back in time to one historic site prior to 30ka, which site would you travel to and why?

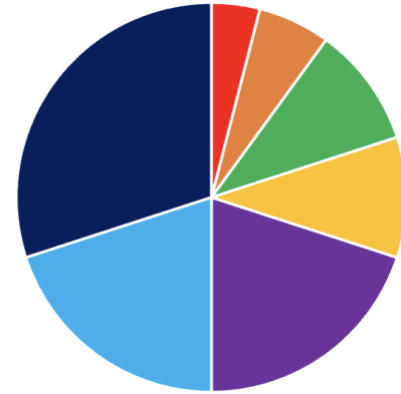
Assignment C: Write a memo to your future boss explaining how this course relates to your imagined future profession.

Assignment D: Develop a brief literature review – of the type that might be found in the introductory section of a journal article – on a course-related subject of your choice. (This assignment may serve as the foundation for your final paper).

- **Presentation:** In groups, students will create a short social-media post (e.g. a TikTok video) on an object or idea that we work together to select. (I do not require that they be posted online for the public, though you are welcome to post them if everyone consents). I will form groups and assign the video topics in week 3.
- **Midterm exam:** You will take a multiple-choice and short-answer quiz, which will be in-person and held in our classroom.
- **Final examination:** The exam will have two components. First, you will take a multiple-choice and short-answer quiz, which will be in-person and held in our classroom. Second, you will use Canvas to submit an original research paper on a topic of your choosing that is covered in the course.

## How your final grade is calculated

ASSIGNMENT CATEGORY	PERCENTAGE
<span style="color: red;">■</span> Presentation	4%
<span style="color: orange;">■</span> Reflection posts	6%
<span style="color: green;">■</span> Reading quizzes	10%
<span style="color: yellow;">■</span> Lecture quizzes	10%
<span style="color: purple;">■</span> Writing assignments	20%
<span style="color: lightblue;">■</span> Midterm exam	20%
<span style="color: darkblue;">■</span> Final exam	30%
<b>Total</b>	<b>100</b>



I use the following grade scale, where  $[x - y)$  denotes values from  $x$  up to but not including  $y$ :

[90 – 100]:	A
[85 – 90):	B+
[80 – 85):	B
[75 – 80):	C+
[70 – 75):	C
[60 – 70):	D
Below 60:	F

### Late assignments

If you experience a situation that prevents you from completing work on time, please inform me as soon as possible. Late work will be given a score of “0” on Canvas by default. However, I am happy to consider both granting extensions and giving you full or partial credit for late work (by manually overriding the default 0 grade on Canvas), depending on the circumstances. Please do not hesitate to contact me about any aspect of the course that you are having difficulty with. I am here to help you learn and succeed in the course, not to make your life more difficult.

There will be no personalized end-of-semester extra-credit assignments. If you have concerns about your final grade, please speak to me early in the semester.

## Required reading

There is one required book for this course, which we will use in the first half of the semester:

- Coolidge, F. L., & Wynn, T. G. (2018). *The rise of Homo sapiens: The evolution of modern thinking*. Oxford University Press. ISBN: 9780190680916.

Please purchase the second edition from 2018, not the first edition. I will upload photocopies of the first two chapters. Thus, you will not need the book until the end of week two. In case the Rutgers bookstore does not yet stock the book, you can purchase paperback copies here:

- [Paperback edition via Amazon](#) (\$59)
- [Paperback edition via Oxford University Press](#) (\$59)

Or e-book copies here:

- [Kindle e-book edition](#) (\$43)
- [Google e-book edition](#) (\$46)

Readings in the second half of the course will be uploaded to Canvas in pdf form.

## RIGHTS AND RESPONSIBILITIES

### Health and safety

Masks must be worn during class meetings; any student not wearing a mask will be asked to leave. Masks should conform to CDC guidelines and should cover the nose and mouth:

<https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/about-face-coverings.html>

### Academic integrity policy

Rutgers University takes academic dishonesty very seriously. By enrolling in this course, you assume responsibility for familiarizing yourself with the Academic Integrity Policy and the possible penalties (including suspension and expulsion) for violating the policy. As per the policy, all suspected violations will be reported to the Office of Student Conduct. Academic dishonesty includes (but is not limited to):

- Cheating
- Plagiarism
- Aiding others in committing a violation or allowing others to use your work
- Failure to cite sources correctly
- Fabrication
- Using another person's ideas or words without attribution—re-using a previous assignment
- Unauthorized collaboration
- Sabotaging another student's work

If in doubt, please consult the instructor. Please review the Academic Integrity Policy:

<http://nbacademicintegrity.rutgers.edu/home/academic-integrity-policy/>

## Copyright disclaimer

Almost all original work is the intellectual property of its authors. This includes not just books and articles, but the syllabi, lectures, lecture slides, recorded lectures, course materials, presentations, homework problems, exams, and other materials used in this course, in either printed or electronic form.

Providing course materials to commercial suppliers such as CourseHero, Chegg, etc. and/or publicly distributing or displaying course materials, or helping others to do so, is a violation of academic integrity.

The authors hold copyrights in their works, which are protected by U.S. statutes. Copying this work or posting it online without the permission of the author may violate the author's rights. More importantly, these works are the product of the author's efforts; respect for these efforts and for the author's intellectual property rights is an important value that members of the university community take seriously. For more instructions on copyright protections at Rutgers University, please refer to:

<https://www.libraries.rutgers.edu/research-tools-and-services/copyright-guidance/copyright-students>

## Requesting accommodations

Rutgers students are expected to attend all scheduled course meetings. University policy excuses absences due to religious observance or participation in Rutgers-approved activities, and permits students to make up work missed for these circumstances. If you will be absent from a class, lab, or exam for any reason, please report your absence here:

<https://sims.rutgers.edu/ssra/>

If you have been told to quarantine, or are experiencing symptoms of any transmittable disease, please remain at home and do not attend in-person class meetings. If you need help to catch up on material you missed, I am happy to schedule personal sessions with you.

Rutgers University welcomes students with disabilities into all the University's educational programs. In order to receive consideration for reasonable accommodations, a student with a disability must contact the appropriate disability services office at the campus where you are officially enrolled, participate in an intake interview, and provide documentation:

<https://ods.rutgers.edu/students/documentation-guidelines>.

If the documentation supports your request for reasonable accommodations, your campus's disability services office will provide you with a Letter of Accommodations. Please share this letter with your instructors and discuss the accommodations with them as early in your courses as possible. To begin this process, please complete the Registration form on the ODS web site at: <https://ods.rutgers.edu/students/registration-form>.

Full disability policies and procedures are at: (848) 445-6800 / Lucy Stone Hall, Suite A145, Livingston Campus, 54 Joyce Kilmer Avenue, Piscataway, NJ 08854 / <https://ods.rutgers.edu/>

## Accessibility of course technology

This course requires use of Canvas and other online communication and multimedia tools. If you need additional services to use these technologies, please request accommodations with your instructor.

Please visit the [Rutgers Student Tech Guide](#) page for resources available to all students. If you do not have the appropriate technology for financial reasons, please email Dean of Students [deanofstudents@echo.rutgers.edu](mailto:deanofstudents@echo.rutgers.edu) for assistance.

If you are facing other financial hardships, please visit the Office of Financial Aid at <https://financialaid.rutgers.edu/>.

## Student wellness resources

### Counseling, ADAP & Psychiatric Services (CAPS)

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

<http://health.rutgers.edu/medical-counseling-services/counseling/>

CAPS is a University mental health support service that includes counseling, alcohol and other drug assistance, and psychiatric services staffed by a team of professionals 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.

Crisis Intervention: <http://health.rutgers.edu/medical-counseling-services/counseling/crisis-intervention/>

Report a Concern: <http://health.rutgers.edu/do-something-to-help/>

### Violence Prevention & Victim Assistance (VPVA)

(848) 932-1181 / 3 Bartlett Street, New Brunswick, NJ 08901 / [www.vpva.rutgers.edu/](http://www.vpva.rutgers.edu/)

The Office for Violence Prevention and Victim Assistance provides confidential crisis intervention, counseling and advocacy for victims of sexual and relationship violence and stalking to students, staff and faculty. To reach staff during office hours when the university is open or to reach an advocate after hours, call 848-932-1181.



# COURSE SCHEDULE AND READINGS

## Module A: Introduction

### Week 1 material

Reading	Cesario, Johnson, & Eisthen (2020): Your brain is not an onion with a tiny reptile inside.
Lecture	Motivations, intuitions, and heuristics.

### Week 1 schedule

Tuesday, September 5	
Wednesday, September 6	Lecture; reading quiz due; lecture quiz due.
Thursday, September 7	
Friday, September 8	
Saturday, September 9	
Sunday, September 10	

### Week 2 material

Reading	Coolidge & Wynn (2018): The brain. Coolidge & Wynn (2018): Working memory.
Lectures	Cognitive architecture in evolutionary perspective.

### Week 2 schedule

Monday, September 11	Lecture; reading quiz due
Tuesday, September 12	
Wednesday, September 13	Lecture; lecture quiz due
Thursday, September 14	
Friday, September 15	Module A reflection post due
Saturday, September 16	
Sunday, September 17	Writing assignment A due

## Module B: Evolution of Primate Cognition

### Week 3 material

Reading	Coolidge & Wynn (2018): Brain evolution. Coolidge & Wynn (2018): Primates.
Lectures	Primate cognitive evolution.

### Week 3 schedule

Monday, September 18	Lecture; reading quiz due
Tuesday, September 19	
Wednesday, September 20	Lecture; lecture quiz due
Thursday, September 21	
Friday, September 22	
Saturday, September 23	
Sunday, September 24	

### Week 4 material

Reading	Coolidge & Wynn (2018): Early Hominins. Coolidge & Wynn (2018): Homo erectus.
Lectures	Early human cognitive evolution.

### Week 4 schedule

Monday, September 25	Lecture; reading quiz due
Tuesday, September 26	
Wednesday, September 27	Lecture; lecture quiz due
Thursday, September 28	
Friday, September 29	Module B reflection post due
Saturday, September 30	
Sunday, October 1	

## Module C: Evolution of Human Cognition

### Week 5 material

Reading	Coolidge & Wynn (2018): The first major leap in cognition: the tree-to-ground sleep transition. Coolidge & Wynn (2018): Homo heidelbergensis and the beginnings of modern cognition.
Lectures	Major transitions in human cognitive evolution.

### Week 5 schedule

Monday, October 2	Lecture; reading quiz due
Tuesday, October 3	
Wednesday, October 4	Lecture; lecture quiz due
Thursday, October 5	
Friday, October 6	
Saturday, October 7	
Sunday, October 8	

### Week 6 material

Reading	Coolidge & Wynn (2018): The rise and fall of Neandertals. Coolidge & Wynn (2018): Enhanced working memory and the evolution of modern thinking.
Lectures	The question of behavioral modernity.

### Week 6 schedule

Monday, October 9	Lecture; reading quiz due
Tuesday, October 10	
Wednesday, October 11	Lecture; lecture quiz due
Thursday, October 12	
Friday, October 13	Module C reflection post due
Saturday, October 14	
Sunday, October 15	

## Midterm Exam

### Week 7 material

Reading	None
Optional reading	None
Lectures	None

### Week 7 schedule

Monday, October 16	Study session for midterm exam
Tuesday, October 17	
Wednesday, October 18	Multiple choice exam (in-person)
Thursday, October 19	
Friday, October 20	
Saturday, October 21	
Sunday, October 22	Writing assignment B due

## Module D: Reason

### Week 8 material

Reading	Boyd (2017): Not by brains alone: the vital role of culture in human adaptations.
Lectures	Learning and searching.

### Week 8 Schedule

Monday, October 23	Lecture; reading quiz due
Tuesday, October 24	
Wednesday, October 25	Lecture; lecture quiz due
Thursday, October 26	
Friday, October 27	
Saturday, October 28	
Sunday, October 29	

### Week 9 material

Reading	Mercier & Sperber (2020): Bounded rationality in a social world.
Lectures	Rationalization and deliberation.

### Week 9 schedule

Monday, October 30	Lecture; reading quiz due
Tuesday, October 31	
Wednesday, November 1	Lecture; lecture quiz due
Thursday, November 2	
Friday, November 3	Module D reflection post due
Saturday, November 4	
Sunday, November 5	

## Module E: Cooperation

### Week 10 material

Reading	Tomasello (2018): The origins of morality.
Lectures	Altruism and fairness.

### Week 10 schedule

Monday, November 6	Lecture; reading quiz due
Tuesday, November 7	
Wednesday, November 8	Lecture; lecture quiz due
Thursday, November 9	
Friday, November 10	Module B reflection post due
Saturday, November 11	
Sunday, November 12	

### Week 11 material

Reading	DeScioli (2016): The side-taking hypothesis for moral judgment
Lectures	Moralization and values.

### Week 11 schedule

Monday, November 13	Lecture; reading quiz due
Tuesday, November 14	
Wednesday, November 15	Lecture; lecture quiz due
Thursday, November 16	
Friday, November 17	Module E reflection post due
Saturday, November 18	
Sunday, November 19	Writing assignment C due

**Week 12 material**

Reading	None
Optional reading	None
Lectures	None

**Week 12 schedule**

Monday, November 20	Class on final papers
Tuesday, November 21	
Wednesday, November 22	No class (Friday schedule)
Thursday, November 23	Thanksgiving recess
Friday, November 24	Thanksgiving recess
Saturday, November 25	Thanksgiving recess
Sunday, November 26	Thanksgiving recess

## Module F: Conflict

### Week 13 material

Reading	Ferguson (2018): Why we fight.
Lectures	Identity and esteem.

### Week 13 schedule

Monday, November 27	Lecture; reading quiz due
Tuesday, November 28	
Wednesday, November 29	Lecture; lecture quiz due
Thursday, November 30	
Friday, December 1	
Saturday, December 2	
Sunday, December 3	Writing assignment D due

### Week 14 material

Reading	Watson-Jones & Legare (2022) Explaining and solving practical problems supernaturally.
Lectures	Superstition and paranoia.

### Week 14 schedule

Monday, December 4	Lecture; reading quiz due
Tuesday, December 5	
Wednesday, December 6	Lecture; lecture quiz due
Thursday, December 7	
Friday, December 8	Module F reflection post due
Saturday, December 9	
Sunday, December 10	



**Week 15 material**

Reading	Read through your notes.
Lectures	Study session for final exam.

**Week 15 schedule**

Monday, December 11	Final paper session
Tuesday, December 12	
Wednesday, December 13	Final exam prep
Thursday, December 14	
Friday, December 15	
Saturday, December 16	
Sunday, December 17	

**Final Exam TBA**