COGST 1101/CS 1710/LING 1170/PHIL 1910/PSYCH 1102
Introduction to Cognitive Science

Course Syllabus

Instructor: Mia Wiegand
Email: jrw369@cornell.edu
Office: Uris 201

Class Times: Daily 1:00–2:15pm, Uris 202
Office Hours: Tues. 10:00-11:00am
(or by appointment)

TA: Karen Sasmita
Email: ss3837@cornell.edu
Office Hours: Wed. 12:00-1:00pm, Uris B59

Course Description

Cognitive Science investigates the mechanisms involved in perceiving, thinking, and acting. Though young as a science, the questions that cognitive science seeks to answer are old, familiar, and remarkably difficult to delineate. It is perhaps for these reasons that cognitive science is a truly interdisciplinary endeavor. It draws on and integrates five disciplines: Philosophy, which provides insight into the nature of the questions themselves; Psychology and Linguistics, which investigate the functions of the mind; Neuroscience, which describes the physical bases of the mind; and Computer Science, which explores the ways that minds can be constructed. This course will introduce you to the insights that each discipline offers to understanding the mind, what current scientific approaches to the mind can tell us about what it does and how it does it, and emerging issues and approaches to the study of the mind and its physical and conceptual boundaries.

Learning Outcomes

The primary goal of this course is for you to think about and understand the mind from a scientific perspective. By the end of this course you should be able to (1) identify the problems that cognitive science seeks to address, (2) describe the major empirical and theoretical insights cognitive science offers into mental functions (perception, action, attention, memory, learning, problem solving, comprehension, language, etc.), and (3) describe how philosophy, psychology, linguistics, neuroscience, and computer science contribute to and broaden our understanding of cognitive science. A final, equally important goal is for you to (4) be able to describe the empirical approaches cognitive scientists use to discover the machinery of the mind. Thus, this course's emphasis is not just on what we know (and don't know) about the mind, but also on how cognitive scientists study it.

Required Readings

There is one required text for this class:

Bermúdez, José Luis. 2014. *Cognitive Science: An Introduction to the Science of the Mind.* 2nd Edition. Cambridge: Cambridge University Press.
ISBN: 978-0521708371

This book has been placed on reserve through the library reserves for a maximum of 4 hours at a time. It is also available for purchase at the Cornell Store or online retailers. Other required readings for this course will be available on the course website.

The lectures will cover some of the material in the assigned readings. They will also include new material, demonstrations, and opportunities for you to think through some of the issues that are central to

cognitive science. Exams will cover the readings and the lectures. You are encouraged to complete all of the assigned readings and to attend each class meeting (see Participation and Quizzes section).

Expectations and Classroom Policies

It is important that students come to class prepared, which includes having completed reading or other assigned materials beforehand. Students may be called upon for questions or explanations of concepts in the readings. Discussion and questions are encouraged in this class. Please remember to be respectful to one another both in and out of class.

To avoid distracting your classmates, please sit in the back of the room if you plan on using a laptop or other electronic device in class. Regardless of your use of electronics, you are expected to remain engaged in class discussions.

Grading Breakdown and Policies

Your final grade will be determined by your performance on three exams (2 preliminary exams and a final), class participation (including quizzes), and homework assignments. Extra credit opportunities will be available throughout the semester.

Participation & Quizzes:	10%
Homework:	10%
Exams:	80%

Participation & Quizzes (10%)

One of the many things cognitive science has taught us is that learning is enhanced by both engagement and testing. In fact, if you want to remember something you just learned, testing your memory is more effective than studying it again. So, quizzes and participation will be incorporated into each class. For each class meeting you will earn a participation grade based on your responses to these questions. Simply turning in an answer sheet will earn you one point toward the total for that day, and answering a quiz question correctly will earn you another point. The percentage of possible points that you earn for a day will be used to determine your participation grade for that day. Quizzes will be on the assigned reading for that day, or on material from the previous lecture. Occasionally, points may be earned by completing in-class activities. At the end of the semester, the three lowest participation grades will be dropped.

Make-up participation: You can make up your participation grade for a missed class by writing and submitting two multiple choice questions based on the readings for the day you missed (or, if nothing was assigned for that day, the reading assignment for the previous meeting). Questions must be submitted to your TA within 24 hours of the beginning of the class that you missed (e.g., by 1:00pm Tuesday if you miss a Monday class). To earn full credit the questions must demonstrate that you read and understand the material. These questions could end up on the exam, so this is a great way to prepare. You may make-up participation for no more than two missed classes.

Homework Assignments (10%)

There will be three homework assignments, one for each major section of the course. The assignments will be announced on the course website and during class. You will have one week to complete them. Final grades on assignments will be reduced by 10% for each day they are late, including weekends.

Turnitin Notice. Students agree that by taking this course all required papers might be subject to submission for textual similarity review to Turnitin.com for the detection of plagiarism. All submitted papers from this year and from previous years will be included as source documents in the Turnitin.com reference database solely for the purpose of detecting plagiarism of such papers. Use of Turnitin.com service is subject to the Usage Policy posted on the Turnitin.com site.

Exams (80%)

There will be three exams for this course (2 preliminary and 1 cumulative final). Your two highest exam scores will be used to determine your final grade. The lowest exam score won't count. If you miss one of the preliminary exams, you can take the final exam as a make-up exam. Because of this, **there will be no other makeup exams except in the case of an unusual need (e.g., a documented illness**). If you are completely happy with your scores on the two preliminary exams you do not need to take the final. I strongly encourage you to take the first exam. Exams will be primarily multiple choice, but will include short answer and short essay questions. Exams will cover material from lectures, readings, assignments, and videos shown in class. Preliminary exams will take place during regular class times.

Extra Credit

One of the goals of this course is to promote active engagement with the course material both in and outside of class. To further this goal, there will be opportunities for extra credit in the form of written reports throughout the semester. Extra credit can add as much as (and no more than) 5% to your final grade. For example, if at the end of the semester you have earned a final grade of 90% and you complete the maximum amount of extra credit, then you will receive an A in the course (95%).

Written Report Instructions:
Option 1: Write a critique of a popular news report on new findings in cognitive science. These should be on articles that appeared within the last six months and are clearly related to topics covered in this class. The critique can identify ways the science could be better characterized, or discuss how topics covered in class are related to the findings (they may offer alternative interpretations, support, contradict, or be contradicted by the new data).
Option 2: Analyze a piece of popular media (television show, movie, short story, comic, etc.) that explores topics related to those covered in this course. Describe how the work relates to principles covered in this course, being sure to demonstrate your understanding of those principles. Does the work bring up any new questions that we haven't discussed?

Written reports should be 2 pages, double-spaced. Each paper is graded and can receive up to 1% extra credit. Reports must be submitted by 11:59pm on the last day of classes, and should be emailed directly to the TA.

Grading Scale

A standard grading scale will be used to determine your letter grade at the end of the semester. A grade corresponding to a C- or better ($\geq 70\%$) is required for an S on the S/U grading scale. Letter grade cut-offs are firm. Grade percentages will be rounded to the second decimal (i.e., 89.99 is a B+).

	F	D-	D	D+	C-	C	C+	B-	B	B+	A-	A	A+
Min	0	60	63	67	70	73	77	80	83	87	90	93	97
Max	59.99	62.99	66.99	69.99	72.99	76.99	79.99	82.99	86.99	89.99	92.99	96.99	100

Academic Integrity

You are expected to adhere to the Cornell University Code of Academic Integrity. This can be found at `http://cuinfo.cornell.edu/Academic/AIC.html`. By submitting your work for academic credit, you are affirming that it is your own.

Contacting your Instructor

Both I and the TA are available by email (see contact info). We may not respond to all emails immediately, but will respond by the end of the next weekday. Direct emails about the course material, homework, or exams to the TA first.

When you send me an email, be sure to include the string "COGST" in the subject line (this helps ensure that I see your email, as I have a filter set up prioritizing student emails.)

University Policies and Regulations

As your instructor I respect and uphold University policies and regulations pertaining to the observation of: religious holidays; accommodations for disability; plagiarism; sexual harassment; and racial or ethnic discrimination. All students are advised to become familiar with the respective University regulations and are encouraged to bring any questions or concerns to the attention of the instructor or TA.

Students with Disabilities

I am committed to ensuring that all students have the opportunity to do well in this course. Please give me your Student Disability Services (SDS) accommodation letter as soon as possible. This will give me adequate time to arrange your approved academic modifications. Meeting with me in my office hours will help ensure confidentiality. If you need an immediate accommodation, please speak with me after class or send an email message to me and/or SDS at `sds_cu@cornell.edu`. If the need arises for additional accommodations during the semester, please contact SDS.

Notice of Copyright

Acknowledgments

Credit for much of the course materials for this class goes to Professor Khena Swallow and Professor Jennifer Schwade, both of whom generously shared their course materials with me. And special thanks in advance to the TA for this course, Karen Sasmita, as well as to any guest lecturers throughout the semester.

Schedule

This schedule is subject to change. Readings should be done before the assigned day. Additional readings, as well as optional readings and videos, may be added to this schedule as the term progresses. Always refer to in-class announcements for the most up-to-date list.

Day		Topic	Reading
24-Jun	M	Overview	
25-Jun	T	Historical Context	Bermúdez Ch. 1
26-Jun	W	The Emergence of Cognitive Science	Bermúdez Ch. 2
27-Jun	Th	Information Processing	
28-Jun	F	Brain Structure and Function	Bermúdez Ch. 11 (p. 315–329)
1-Jul	M	Neural Systems	
2-Jul	T	Vision	Anderson Ch. 2
3-Jul	W	Attention (*Karen Sasmita*)	Bermúdez Ch. 11 (p. 330–343)
		Homework 1 due, 11:59pm	
4-Jul	Th	*No class*	
5-Jul	F	Memory Systems	Banich Ch. 10 (p. 265–287)
8-Jul	M	Memory Systems (*Adam Broitman*)	
9-Jul	T	**Prelim 1**	
10-Jul	W	Linguistics	Radvansky & Ashcraft Ch. 9
11-Jul	Th	AI: Physical Symbol Systems	Bermúdez Ch. 8
12-Jul	F	Problem Solving	
15-Jul	M	Language Acquisition	Bermúdez Ch. 6
16-Jul	T	AI: Connectionism	Bermúdez Ch. 9
17-Jul	W	Natural Language Processing	
18-Jul	Th	Word Perception	
		Homework 2 due, 11:59pm	
19-Jul	F	Concepts	Sternberg Ch. 8 (p. 291–311)
22-Jul	M	Comprehension	Goldstein Ch. 11
23-Jul	T	**Prelim 2**	
24-Jul	W	Minds and Bodies	Clark Appendix 1
25-Jul	Th	Dynamic Cognition	Bermúdez Ch. 13 (p. 403–420)
26-Jul	F	Situated Cognition	Bermúdez Ch. 13 (p. 420–443)
29-Jul	M	Animal Cognition (*Caitlyn Finton*)	
30-Jul	T	Free Will and Determinism	
31-Jul	W	Consciousness	Bermúdez Ch. 14
1-Aug	Th	Ethics & the Future of Cognitive Science	
		Homework 3 due, 11:59pm	
2-Aug	F	Course Summary	
6-Aug	T	**Final Exam**	Review all
		1:30-4:00pm, Uris 202	

Compiled: July 28, 2019