

Introduction to Cognitive Science

- Fall 2014 -

[NOTE: The official version of this document is always the one posted on the Canvas site for the class. However, you will be notified if there is any change.]

I. Basic Information

Course Time: Tue/Thu 9:30-11:00AM

Classroom: MEZ 1.216

Unique: 43969

Instructors	David Beaver	Zenzi M. Griffin
Position	Full Professor, Depts. of Linguistics and Philosophy	Full Professor, Depts. of Psychology, Linguistics, Communication Science and Disorders
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Office Hours	M & W 11-12:30 & by appt	Th 1:00-3:00, TBA, & by appt

II. Course Description

This course is a graduate level introduction to the study of intelligence, mind and brain from an interdisciplinary perspective. We will study contemporary views of how the mind works, the nature of reason, and how thought processes are reflected in the language we use. Central to the course will be the modern computational theory of mind, the embodiment of that theory in a few pounds of grey meat, and what we know about how that lump of meat processes language, thinks thoughts, and develops consciousness. A wide range of topics will be covered (with levels of depth partly based on class interest):

- Artificial intelligence and the Turing Test
- Cognition as a solution to a search problem
- Human decision making
- Pragmatic reasoning
- Logic and reasoning
- Paradox and the limits of reason

- The Halting Problem and Godel Incompleteness
- Basic neuroscience
- Psycholinguistics
- Visual perception
- Human and Machine learning
- Human Memory Systems
- Consciousness

These topics are central to the interdisciplinary field of Cognitive Science, an area in which UT boasts enormous strength. Although there are no specific course prerequisites, you will be expected to think, read, and write about topics that involve a very broad range of disciplines and methodologies. Thus you will need to be flexible. You will read discursive philosophical material, historical accounts, and descriptions of experiments in psychology and neuroscience, but you will also need to be comfortable learning about relatively formal methods, for example involving basic statistics, probability theory and theory of computation. However, it must be emphasized that you do not need to know any of this in advance, you just need to be completely fearless.

III. Readings and Assignments

Readings will consist of primary papers from the literature and short overview articles. They will normally be made available as pdf files on Canvas. There is no course textbook. Readings for each week will be posted on Canvas by Tuesday of the previous week.

Students will submit work for grading in three forms. First, they will complete a short commentary on readings each week. Weekly commentaries will be graded on a satisfactory/unsatisfactory basis, and will be used primarily to drive class discussion. Discussion board posts for each week's reading(s) will be due at noon each Monday. Second, there will be six assignments due every second week. Assignments will be due by electronic submission on Canvas by the start of class on Thursday every second week. And, third, a short paper will be due at the end of the semester. Students will receive instructions on this paper in week 10, and will be expected to select a topic by the end of week 11.

Grade breakdown:

Weekly Discussion Posts	30%
Bi-weekly assignments	30%
Long paper	25%
Attendance	5%
Classroom interaction	10%

IV. Preliminary week by week schedule for 2013

1	Thu Aug 28	History of Reason + student intros
2	Tue Sep 2 Thu Sep 5	Overview of Cognitive Science phases + student intros Turing Test & AI + student intros
3	Tue Sep 9 Thu Sep 11	Cognition as a solution to a search problem (+ student intros?) Cognition as a solution to a search problem
4	Tue Sep 16 Thu Sep 18	Human decision making Experimental design
5	Tue Sep 23 Thu Sep 25	Human decision making Basic neuroscience
6	Tue Sep 30 Thu Oct 2	Neuro skepticism Reasoning & Paradox
7	Tue Oct 7 Thu Oct 9	Reasoning & Paradox The Halting Problem and Godel Incompleteness
8	Tue Oct 14 Thu Oct 16	Visual perception Visual perception
9	Tue Oct 21 Thu Oct 23	Declarative & Procedural memory Declarative & Procedural memory
10	Tue Oct 28 Thu Oct 30	Human and Machine learning Connectionist models
11	Tue Nov 4 Thu Nov 6	Statistical learning & word segmentation Learning & representation (dynamical systems)
12	Tue Nov 11 Thu Nov 13	Psycholinguistics/comprehension Distributed cognition
13	Tue Nov 18 Thu Nov 20	Game theory Nativism, Empiricism... and cultural relativism?
14	Tue Nov 25 Th Nov 27	Consciousness Thanksgiving
15	Tue Dec 2 Thu Dec 4	Consciousness Wrap up

V. Academic Integrity

University of Texas Honor Code

The core values of The University of Texas at Austin are learning, discovery, freedom, leadership, individual opportunity, and responsibility. Each member of the university is expected to uphold these values through integrity, honesty, trust, fairness, and respect toward peers and community.

Each student in this course is expected to abide by the University of Texas Honor Code. Any work submitted by a student in this course for academic credit will be the student's own work.

You are encouraged to study together and to discuss information and concepts covered in lecture and the sections with other students. You can give "consulting" help to or receive "consulting" help from such students. However, this permissible cooperation should never involve one student having possession of a copy of all or part of work done by someone else, in the form of an e-mail, an e-mail attachment file, a diskette, or a hard copy.

VI. Other University Notices and Policies

Use of E-mail for Official Correspondence to Students

All students should become familiar with the University's official e-mail student notification policy. It is the student's responsibility to keep the University informed as to changes in his or her e-mail address. Students are expected to check e-mail on a frequent and regular basis in order to stay current with University-related communications, recognizing that certain communications may be time-critical. It is recommended that e-mail be checked daily, but at a minimum, twice per week. The complete text of this policy and instructions for updating your e-mail address are available at <http://www.utexas.edu/its/policies/emailnotify.html>.

Documented Disability Statement

Any student with a documented disability who requires academic accommodations should contact Services for Students with Disabilities (SSD) at (512) 471-6259 (voice) or 1-866-329-3986 (video phone). Faculty are not required to provide accommodations without an official accommodation letter from SSD. *(Note: Details of a student's disability are confidential. The instructor and TAs will not ask questions related to a student's condition or diagnosis when receiving an official accommodation letter.)*

- Please notify me as quickly as possible if the material being presented in class is not accessible (e.g., instructional videos need captioning, course packets are not readable for proper alternative text conversion, etc.).
- Contact Services for Students with Disabilities at 471-6259 (voice) or 1-866-329-3986 (video phone) or reference SSD's website for more disability-related information:
http://www.utexas.edu/diversity/ddce/ssd/for_cstudents.php

Behavior Concerns Advice Line (BCAL)

If you are worried about someone who is acting differently, you may use the Behavior Concerns Advice Line to discuss by phone your concerns about another individual's behavior. This service is provided through a partnership among the Office of the Dean of Students, the Counseling and Mental Health Center (CMHC), the Employee Assistance Program (EAP), and The University of Texas Police Department (UTPD). Call 512-232-5050 or visit <http://www.utexas.edu/safety/bcal>.

Emergency Evacuation Policy

Occupants of buildings on the UT Austin campus are required to evacuate and assemble outside when a fire alarm is activated or an announcement is made. Please be aware of the following policies regarding evacuation:

§ Familiarize yourself with all exit doors of the classroom and the building. Remember that the nearest exit door may not be the one you used when you entered the building.

§ If you require assistance to evacuate, inform me in writing during the first week of class.

§ In the event of an evacuation, follow my instructions or those of class instructors.

Do not re-enter a building unless you're given instructions by the Austin Fire Department, the UT Austin Police Department, or the Fire Prevention Services office.