CSC587 Cognitive Science Syllabus

Professor Clark Elliott

Winter 2020-21

Logistics:

Class meets: Asynchronous Online / informal meetings some Wednesdays 6:00 PM
Professor: Dr. Clark Elliott
Class website: http://condor.depaul.edu/~elliott/587
email: elliott@depaul edu.
   [Include "587: " prefix in subject line and MEANINGFUL mail header!]
Course Management: D2L.depaul.edu

Textbook:

Jose Luis Bermudez, Cognitive Science: An Introduction to the Science of the Mind, **3rd Edition**
Cambridge University Press, **2020**
Extensive readings from online papers, and D2L-posted sources.

I was able to download an electronic (e-book, $36.49) copy of the THIRD EDITION 2020 of the Bermudez text book from Amazon by following the link to the 2nd Edition (2015):

https://www.amazon.com/Cognitive-Science-Introduction-Mind-ebook/dp/B081HJ3VLK/ref=sr_1_fkmr1_1?keywords=cognitive+science+2nd+edition+bermudez&qid=1609615791&sr=8-1-fkmr1

Grading:

Quizzes & 40%
Assignments 60%
Exams, drawn from above points if deemed necessary.

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Grading Scale:
            95%             A
            90%             A-
            86,83,80        B+,B,B-
            78,74,70        C+,C,C-
            65,60           D+,D
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I reserve the right to raise the grade of a student that has demonstrated exceptional contributions in some particular portion of the class. I reserve the right to draw exam points from quizzes and / or assignments if needed to ensure coverage of the material.

Topics:

In this graduate seminar course we will cover both a broad traditional introduction to the field of Cognitive Science, and an introduction into current research in the area through the reading and discussion of published research papers, and book chapters.

Cognitive Science has been described as the meeting point of artificial intelligence, cognitive psychology, neuroscience, linguistics, and philosophy . We will study the ways in which (a) AI models can suggest possible architectures of the human brain, (b) psychology studies can suggest both architectures of the human brain and also possible architectures of intelligent computer systems (c) theories of computational intelligence can suggest designs for both the human brain and intelligent computer systems, and (d) difficult theoretical and philosophical problems that arise when we consider building systems with the staggering complexity of the human mind. Cognitive Science, or Information Processing Psychology, also embraces the disciplines of linguistics, philosophy, and physiology, and we will consider topics from these areas as well. Specific topics include, but are not limited to: Cognitive Psychology, Categorization, Imagery, Representation and Symbols, Perception, Memory, Attention, Language, Semantic Networks, Emotion, Case-based reasoning, Scripts, Metaphor, new frontiers of science, Philosophical concerns, Brain plasticity.

Class structure:

This is a reading, lecture, and discussion seminar-style class. Scholarly discussion of the ideas is the focus of the course. For winter 20201, discussion will take place online on the D2L forums. Students are expected to keep up on the reading each week, and to actively participate in the discussions.

Each collection of readings / lecture topics will have a (generally weekly) closing date, and class discussion of the topic will officially end on that date.

Maintaining a written, ongoing, *ideas file* is required.

Learning Goals:

At the end of class you will:

- Have a broad understanding of the basic problems of cognitive science.
- Have a good understanding of some of the approaches taken to modeling human cognition on computers.
- Have developed competency in reading, and discussing challenging research articles.
- Have participated in many high-level discussions of the course material.
- Have developed a sophisticated understanding of how true scientific curiosity and procedure works

- Have demonstrated master's-level understanding of cognitive science on exams such that you are qualified to teach this course in the future.

Office hours for the course are available from my faculty link at cdm.depaul.edu

All assignments, the assignment schedule, and the course materials, are available online at either d2l.depaul.edu or the class website.

Submission File Formats:

All submissions to D2L MUST BE IN THE SPECIFIED FORMAT or they will not be accepted for credit. There are very strict rules on file formats for this class and thus no other (alternate) formats will be graded. Follow the submission instructions for each assignment.

Sometimes this means in STANDARD ZIP FORMAT, including submissions of a single file. No 7zip files, no rar files, etc. No exceptions. In some cases zip files are prohibited.

Sometimes this means Microsoft Word format, or in plain HTML, including text files contained within a ZIP archive. (Free programs are available to produce each of these formats.) NO PDF FILES.

Follow the instructions for each assignment.

Students are responsible for downloading their assignments after uploading, to make sure that files have not been corrupted. Corrupted files will not be graded.

NO LATE ASSIGNMENTS will be accepted for credit, unless otherwise noted. If you miss a deadline, time to move on!

Academic Integrity:

Cheating, plagiarism, and unethical conduct are not allowed, and will be sanctioned, including referral to the dean's office, and failure in the class. Please refer to the academic handbook by which rules you are expected to abide.

Violations include, but are not limited to: making claims on any checklist for work that has not been done; including ANY un-cited work of others in any documents you turn in; turning in work, including any program, that has been authored by someone other than yourself; and in some cases including *any* work of others, whether cited or not–see the rules for each assignment.

Point Breakdowns for CSC587 (1,000 points)

All assignments, point values and due dates are given on D2L.

Assignments for Winter 2021 include, but may not be limited to:

1. **Ambiguity in the English language** written analysis
2. Collected archive text file with all your **discussion postings** for the quarter
3. **Ideas file** of your original, blue-sky ideas relative to the topics covered in the course.
4. **Neural network** simple face recognition program that embodies the Bermudez discussion (No programming background required).

All grades are subject to Academic Integrity Sanctions.

"Minor points" notation:

From time to time I use the point box as a communication vehicle in two specific ways, and I reserve the right to add minor points for this purpose:

- One point extra: I am tipping my hat to you for particularly fine work. That is, if you get 101 points on a 100 point assignment, I may be saying, "Hey, I noticed the five extra modules your wrote. Good job!"
- Two points extra: If you receive two extra points, I am acknowledging an *exceptional* contribution beyond expectations, so 102 points on a 100 point assignment is something to feel really good about, and is a rare compliment.
- Grade of "1": used as a placeholder to let a student know that I have reviewed an assignment, and am waiting for further information or work as per correspondence. A "1" will *always* be resolved to a different grade.
- Grade of "2": a serious warning that you need to communicate with me about possible plagiarism or some other irregularity that is being investigated.

More Policies

Changes to Syllabus

This syllabus is subject to change as necessary during the quarter. If a change occurs, it will be addressed during class, posted in D2L, and sent via email.

Online Course Evaluations

Evaluations are a way for students to provide valuable feedback regarding their instructor and the course. Detailed feedback will enable the instructor to continuously tailor teaching methods and course content to meet the learning goals of the course and the academic needs of the students. They are a requirement of the course and are key to continue to provide you with the highest quality of teaching. The evaluations are anonymous; the instructor and administration do not track who entered what responses. A program is used to check if the student completed the evaluations, but the evaluation is completely separate from the student's identity. Since 100% participation is our goal, students are sent periodic reminders over three weeks. Students do not receive reminders

once they complete the evaluation. Students complete the evaluation online in CampusConnect.

Academic Integrity and Plagiarism

This course will be subject to the university's academic integrity policy. More information can be found at http://academicintegrity.depaul.edu/. If you have any questions be sure to consult with the professor.

Publicly sharing or posting online any prior or current materials from this course (including exam questions and/or answers) is considered to be providing unauthorized assistance prohibited by the policy. Both students who share/post and students who access or use such materials are considered to be cheating under the Policy and will be subject to sanctions for violations of Academic Integrity.

There is NO CHEATING OF ANY KIND in this class!

Academic Policies

All students are required to manage their class schedules each term in accordance with the deadlines for enrolling and withdrawing as indicated in the University Academic Calendar. Information on enrollment, withdrawal, grading and incompletes can be found at: cdm.depaul.edu/enrollment.

Students with Disabilities

Students who feel they may need an accommodation based on the impact of a disability should contact the instructor privately to discuss their specific needs. All discussions will remain confidential.
To ensure that you receive the most appropriate accommodation based on your needs, contact the instructor as early as possible in the quarter (preferably within the first week of class), and make sure that you have contacted the Center for Students with Disabilities (CSD) at: csd@depaul.edu.

Lewis Center 1420, 25 East Jackson Blvd.
Phone number: (312)362-8002
Fax: (312)362-6544
TTY: (773)325.7296

Other Course Policies

Attendance: Students are expected to attend each class, or view the class online, typically during the week the lecture is presented. Attendance will not be formally taken beyond the start of the quarter, but unless otherwise noted ALL the course material presented in the lectures is suitable for exams. I will typically ask questions of named students not present in the classroom, to be viewed online, and answered at the forums. All students matter to me.

Class Discussion: Student participation in class discussions is expected, and this will take place in class for local students, and online for all students.

Attitude: A professional and academic attitude is expected throughout this course. Measurable examples of non-academic or unprofessional attitude include but are not limited to: talking to others when the instructor is speaking, mocking another's opinion, cell phones ringing, emailing, texting or using the internet whether on a phone or computer. If any issues arise a student may be asked to leave the classroom.

Cell phones / laptops in class: If you need to use your cell phone for any reason, or your laptop for any reason other than following the class slides, and taking notes, *leave the room.* You may quietly leave and re-enter as often as necessary unless I note otherwise. Your peers devote many hours out of their busy lives, and hundreds of dollars, to come to class. They deserve a vibrant, focused, environment. If you have a special case, discuss it with the instructor ahead of time. NO TEXTING, EMAIL, FACEBOOK, etc. in the classroom.

Civil Discourse: DePaul University is a community that thrives on open discourse that challenges students, both intellectually and personally, to be Socially Responsible Leaders. It is the expectation that all dialogue in this course is civil and respectful of the dignity of each student. Any instances of disrespect or hostility can jeopardize a student's ability to be successful in the course.