Cogs200 D100: Fundamentals of Cognitive Science
Syllabus

Spring 2020

Last updated: January 2, 2020

Course Description

An introduction to major empirical methods and theoretical frameworks for exploring the mind that examines some of the foundational debates that have fueled investigations over the past fifty years. Taking an interdisciplinary approach, the course illustrates how a convergence of ideas from psychology, philosophy, linguistics, and computer science has led to deep explanations of a range of cognitive science topics.

Instructor

Dr. Margaret Grant (Most people call me Meg, you may do so as well; pronouns she/her)
Email: margaret_grant@sfu.ca
Office: Robert C. Brown Hall Building (Burnaby Campus), room 8115
Office hours (subject to change): Mon, Thurs 2:30-4pm or by appointment.

Meeting time

Weds: 11:30-12:20, WMC 3513
Fri: 1:30-12:20, RCB 6101

Email policy

• If at all possible, please attend office hours with questions.
• Please email me from your sfu.ca email account (or via Canvas) with Cogs 200 in the subject line.
• I will reply to email inquiries within 2 weekdays.

Course website

• This course uses Canvas. To access the lecture slides and other course-related documents, log in to https://canvas.sfu.ca with your SFU computing ID and password.
• You should check Canvas regularly for class-related announcements.
Course materials

- Additional readings available via Canvas (see list below).

Evaluation scheme

- Participation (via Canvas): 10%
- In-class quizzes and assignments: 15%
- Group presentation: 20%
- Midterm exam: 25%
- Final exam: 30%

Evaluation details

Canvas participation:

In addition to the textbook readings, there are several articles we will read to engage with course concepts. Each of these articles has one or two presenters and a discussion board associated with it on Canvas. For each article, each student is asked to make an extended comment on the reading by Monday at 11:59pm the week that the article will be presented (on Friday). An extended comment is approximately a short paragraph, with the goal of making a critical comment, making an observation about a new direction for the research, or simply asking a detailed question about what is actually being said in the article. These commentaries are used by the presenter(s) to form their discussions. These commentaries are a way for you to “get your word in” for the discussion and shape it a way that helps the presenter. To be clear, all students are required to post a comment for all articles (including multiple articles on a single day). These comments are graded based on thoughtfulness and relevance and form the basis of your participation grade. Late posts will not be accepted, but students may make up part of their grade through research engagement (see below).

In-class quizzes and assignments

Each Friday we’ll have either a quiz or an in-class activity. Occasionally activities could involve short preparation work to be completed at home beforehand, in which case I will let you know in advance. These will be marked for completion (i.e., complete = 100%, incomplete = 0%). Two unexcused absences will be allowed automatically (to accommodate illness etc.). If you have (medically documented) extended or repeated illnesses, please speak to me and we will come up with a solution.

Group Presentation

Students will deliver group presentations of the assigned readings. Each student must be a part of one group presentation. Sign-ups will take place at the beginning of the term. Presentations will take place on Wednesdays, unless there are reasons to change the schedule. The format and marking scheme for the presentations will be posted in a separate document on Canvas.
Exams
The mid-term and final exams will be a mixture of multiple choice and short answer questions similar to those from in-class quizzes.

Research Engagement
Students will be able to make up a maximum of 2 missed Canvas discussion posts by accumulating a maximum of 2 Research Participation System (RPS) credits. Note that these credits are not “superadditive” with participation. That is, they are only meant to replace points that are lost on this grade segment. Thus, you cannot exceed the maximum point value by completing additional RPS credits. These credits can be accumulated in the following ways:

1. One RPS credit is awarded for at every half-hour of research participation in a sanctioned research project through the RPS system in the Department of Linguistics. Participation is voluntary, and you may not repeat research projects to multiply credits awarded. You can find a list of available sanctioned projects as well as an explanation of the procedures at [https://www.sfu.ca/linguistics/research/research_participation_system.html](https://www.sfu.ca/linguistics/research/research_participation_system.html) (usually updated the 2nd week of the semester).

2. One RPS credit is awarded for listening to 1-hour’s worth of a podcast from this list: [https://www.superlinguo.com/post/175450303754/linguistics-and-language-podcasts](https://www.superlinguo.com/post/175450303754/linguistics-and-language-podcasts). To claim your credit, please complete a half-page summary (single-spaced) for each hour of podcast time that you listened to. This summary must include a) the URL and duration of the podcast, b) the title and author of the podcast, and c) a minimum 300 word summary of its contents. Send this summary using a weblink that will appear (again later in the semester) on [https://www.sfu.ca/linguistics/research/research_participation_system.html](https://www.sfu.ca/linguistics/research/research_participation_system.html).

3. Two RPS credits are awarded for completing a 3-hour Research Ethics Tutorial (known as TCPS CORE) sanctioned by Canada’s official research agencies. This can be done online at [https://www.sfu.ca/ore/EducationTraining.html](https://www.sfu.ca/ore/EducationTraining.html). Upon completion, you will be given a PDF of a certificate of completion with your name. Send this PDF using a weblink that will appear after the 2nd week of the semester at the following page: [https://www.sfu.ca/linguistics/research/research_participation_system.html](https://www.sfu.ca/linguistics/research/research_participation_system.html).

Course Grading

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>A+</td>
<td>96 - 100%</td>
</tr>
<tr>
<td>A</td>
<td>91 - 95%</td>
</tr>
<tr>
<td>A-</td>
<td>86 - 90%</td>
</tr>
<tr>
<td>B+</td>
<td>81 - 85%</td>
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<tr>
<td>B</td>
<td>76 - 80%</td>
</tr>
<tr>
<td>B-</td>
<td>71 - 75%</td>
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<tr>
<td>C+</td>
<td>66 - 70%</td>
</tr>
<tr>
<td>C</td>
<td>61 - 65%</td>
</tr>
<tr>
<td>C-</td>
<td>56 - 60%</td>
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<tr>
<td>D</td>
<td>50 - 55%</td>
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<tr>
<td>F</td>
<td>50% and below</td>
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Accommodations

- All student requests for accommodations for their religious practices must be made in writing by the end of the first week of classes or no later than one week after a student adds a course.
- Students requiring accommodations as a result of a disability must contact the Centre for Accessible Learning (caladmin@sfu.ca).

Key dates

- Please refer to the Student Services Deadlines page ([http://www.sfu.ca/students/deadlines/fall.html](http://www.sfu.ca/students/deadlines/fall.html)) for key dates pertaining to enrolment, etc.
Missed test policy

• If you will miss an exam due to illness or other extenuating circumstances, please let me know before the exam time if at all possible. Proper medical documentation will be required upon your return to class.

• No make-up exams or assignments will be given. If you miss the midterm exam (with documentation), its weight will be shifted to the final exam.

Academic integrity

“All members of the University community share the responsibility for the academic standards and reputation of the University. Academic integrity is a cornerstone of the development and acquisition of knowledge. It is founded on principles of respect for knowledge, truth, scholarship and acting with honesty. Upholding academic integrity is a condition of continued membership in the university community.”

“Academic dishonesty, in whatever form, is ultimately destructive of the values of the University. Furthermore, it is unfair and discouraging to the majority of students who pursue their studies honestly. Scholarly integrity is required of all members of the University.”

(From the SFU Code of Academic Integrity and Good Conduct, S10.01 1.3, 1.4)

• You are subject to the Student Conduct Policy and the Student Academic Integrity policy ([https://www.sfu.ca/policies/gazette/student.html](https://www.sfu.ca/policies/gazette/student.html)).

• Violations such as plagiarism and other cheating will be handled in accordance with regulations.

• Helpful plagiarism tutorial available through SFU library: [https://www.lib.sfu.ca/help/academic-integrity/plagiarism-tutorial](https://www.lib.sfu.ca/help/academic-integrity/plagiarism-tutorial)

• Please note that a grade of FD (Failed-Dishonesty) may be assigned as a penalty for academic dishonesty.

Outside assistance with written work

• If you hire a tutor to help you, please follow this procedure from the Linguistics department website: “If a student has a tutor help him/her with his/her paper, s/he must provide the following: (i) the name, telephone number, and e-mail address of the tutor; (ii) a copy of the draft(s) that s/he submitted to the tutor; (iii) a copy of the changes suggested by the tutor. A tutor cannot edit or co-write the student’s paper. A tutor can only identify issues that the student should improve in his/her paper. A tutor is not permitted to correct the student’s paper using word processing software that highlights changes that s/he simply accepts.”
Course schedule at a glance (Subject to change)

<table>
<thead>
<tr>
<th>Lecture</th>
<th>Date</th>
<th>Topic</th>
<th>Key dates</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>8, 10 Jan</td>
<td>Introduction</td>
<td></td>
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<tr>
<td>2</td>
<td>15, 17 Jan</td>
<td>Human rationality</td>
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<tr>
<td>3</td>
<td>22, 24 Jan</td>
<td>Language acquisition and formal learning</td>
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<tr>
<td>4</td>
<td>29, 30 Jan</td>
<td>Spelke objects</td>
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<td>5</td>
<td>5, 7 Feb</td>
<td>Concept learning</td>
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<tr>
<td>6</td>
<td>12, 14 Feb</td>
<td>Intro to connectionism</td>
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Feb 18-23: Reading break

<table>
<thead>
<tr>
<th>Lecture</th>
<th>Date</th>
<th>Topic</th>
<th>Key dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>26, 28 Feb</td>
<td>Midterm review</td>
<td>Midterm Exam 28 Feb</td>
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<tr>
<td>8</td>
<td>4, 6 Mar</td>
<td>Language Acquisition and connectionism</td>
<td></td>
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<tr>
<td>9</td>
<td>11, 13 Mar</td>
<td>Propositional attitudes, representation, and connectionism</td>
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<tr>
<td>10</td>
<td>18, 20 Mar</td>
<td>Connectionism and concept learning</td>
<td></td>
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<tr>
<td>11</td>
<td>25, 27 Mar</td>
<td>Object permanence in a connectionist model</td>
<td></td>
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<tr>
<td>12</td>
<td>1, 3 Apr</td>
<td>Hybrid model: rules and connectionism in speech production</td>
<td></td>
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<tr>
<td>13</td>
<td>8 Apr</td>
<td>Review</td>
<td></td>
</tr>
</tbody>
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Final Exam: April 24, 12pm-3pm

Detailed course schedule

- Week 1: Introduction
- Week 2: Human rationality
  Textbook: 10.2-10.3 (285-305)
  Article: Samuels et al. (1999)
- Week 3: Language acquisition and formal learning
  Textbook: 6.1 (141-151)
  Articles: Berko (1958), Lidz et al. (2003)
- Week 4: Spelke objects
  Textbook: 9.3 (254-261)
  Article: Scholl and Leslie (1999)
- Week 5: Concept learning
  Articles: Ch. 1 of Markman (1991); Ch. 4 of Markman (1991)
- Week 6: Connectionism
  Textbook: 8.1-8.2 (209-227) and 9.2 (245-254)
- Week 7: Midterm review and exam
- Week 8: Language acquisition and connectionism
  Article: McClelland and Rumelhart (1986)
- Week 8: Propositional attitudes, representation and connectionism
- Week 9: Connectionism and concept learning
  JLB: 8.3-8.4 (227-235)
  Article: McClelland and Rumelhart (1985)
• Week 10: Object permanence in a connectionism model  
  JLB: 9.4 (261-268)  
  Article: Munakata et al. (1997)

• Week 11: Hybrid model: rules and connectionism in speech production  
  Article: Dell (1986)

References


