NACS642: Cognitive and Computational Neuroscience
Spring 2019

**Time:** Tu-Th 10 – 12  
**Place:** Cole 0211  
**Instructor:** Ellen Lau  
**Email:** ellenlau@umd.edu  
**Office hours:** by appt.  
**Course website:** [http://ling.umd.edu/~ellenlau/courses/nacs642/NACS642_S19.html](http://ling.umd.edu/~ellenlau/courses/nacs642/NACS642_S19.html)

**Course description**
This survey course provides an introduction to cognitive neuroscience. Cognitive neuroscience is a broad domain ‘at the intersection of cognitive science and neuroscience’. In practice, what distinguishes cognitive neuroscience research from other subdomains of cognitive science and neuroscience is a particular set of methods applied to a particular set of problems. In this course we will explore what these methods have taught us about human cognition, and you will gain hands-on experience by conducting a pilot study of your own design with magnetoencephalography (MEG).

**Course requirements and Grading**
- 10% - Quizzes  
- 15% - Class participation and debates  
- 30% - Reading responses  
- 30% - Experiment proposal  
- 15% - Take-home ‘wrap up’ essay assignment

**Materials**
The textbook for the course is *Essentials of Cognitive Neuroscience* by Brad Postle. The schedule of primary literature readings, links to the articles, and supplementary readings is maintained on the course website. This schedule is subject to change, so make sure to check it frequently. Assignments will be submitted through ELMS.

**Readings**
Readings will be assigned for each class, both from the textbook and from the primary literature. **Carefully reading the assigned reading is the most important part of this class.** *Textbook readings.* Brief weekly quizzes will test your knowledge of the textbook readings. *Primary literature.* You will submit reading responses on the primary literature readings before the class where they are discussed—minimum one full paragraph. This is an opportunity to describe what you thought was important about the results, raise doubts or concerns about the arguments, and note questions that you had.

**Reading responses are due by 9pm the night before class.** Bonus: if you additionally make a good reply to another student’s response, I’ll give you a bonus point (max 5/year).

**Class participation** In order to get anything out of this course, you will have to regularly attend class and participate in class discussion.

**(Quasi-)Debates**
Across the semester each student will help to lead 1-2 brief ‘debates’ over an assigned reading. Rather than a classic debate format, participants will instead take on the role of a ‘kind reviewer’ and a ‘mean reviewer’. The kind reviewer will highlight the unique strengths and important insights of the work, and the mean reviewer will tear the work down. Each
reviewer will speak for 10 minutes, and should aim for their presentation to be as engaging and thought-provoking as possible!

**Experiment proposal**
This year due to various constraints I will be substituting the traditional group project MEG experiment with an individual experiment proposal assignment. Specifically, you will write up a proposal for an experiment that uses cognitive neuroscience methods to investigate a question of interest. Don’t want this to just be a ‘throw-away’ assignment to be rushed off at the end, so we will workshop these proposal ideas in several group sessions across the course of the semester, and you will present them to the class at the end!

**Take-home wrap up assignment**
I’m not calling this an exam because that sounds alarming! but at the end of the semester I will give you a take-home assignment with several essay questions that ask you to reflect on what new generalizations and conclusions you are taking away from the course. We will make your answers available afterwards to everyone in the course so that we can jointly reflect on them.

I feel very strongly about surfing/doing non-class stuff on devices while other people are talking, so please don’t do it in my class. My perspective on small, upper-level university courses is that joining them is a commitment to joining an academic community for four months. In the four hours a week that this community spends together, the person speaking does not have to work to ‘win’ the attention of others moment-by-moment by being more entertaining/interesting/relevant than your email, Facebook feed, or data analysis problem.

In part, this politeness creates the trust that’s necessary for deep intellectual engagement. But perhaps more importantly, this kind of environment is necessary for intellectual progress, because following out the logic of a complex argument is almost never going to be more rewarding moment-by-moment than email or Instagram. The insight you have after grasping the full argument, however, could stay with you for the rest of your career.

If you have a severe deadline for something else which means that you really cannot put aside your work for the 2 hours of class time, then being in alignment with this request means that you may need to make a tough decision and skip class that day. I can’t tell you that this isn’t going to impact our academic community, or your performance in the course if it happens frequently, but we all face difficult tradeoffs of this kind and I will respect those decisions in that light.

And finally if you are facing an urgent situation that requires you to periodically monitor your electronic device (e.g. a childcare issue, a military unit under your command, etc.) please let me know so that I don’t frown at you tapping your phone under the table!

**General Policies**
-Students are encouraged to work together on the lab assignment and discuss readings outside of class, but are expected to write up their work independently.
-Unless due to a documented personal emergency, late reading assignments will not be accepted, and other assignments will receive a 10% penalty for each day overdue.
-Please don’t hesitate to contact me if you are having trouble with any aspect of the
course—sooner is always better than later.

**Attendance Policy**

Religious holidays: The University of Maryland’s policy provides that students should not be penalized because of observances of their religious beliefs. Students shall be given an opportunity, whenever feasible, to make up within a reasonable time any academic assignment that is missed due to individual participation in religious observances. **It is the student’s responsibility to inform the instructor of any intended absences for religious observances before the day to be missed.**

Snow Policy: On days the university is closed due to inclement weather, class is cancelled. However, subsequent days will not be altered. For example: if there is a test on Friday, and school is cancelled on Thursday, the test will still be on Friday. It is up to you to email questions you have in preparation for the test.

**Students with Disabilities**

If you have a physical disability or a learning disability, it is your responsibility to bring it to my attention at the beginning of the course—before any exams or assignments are due. I will make every effort to accommodate your needs. If you require special accommodations for test-taking, you need to arrange for this at least one week before a scheduled exam, and then also remind me by email a day or two before the exam.

**Academic Honesty**: We follow the University’s policies on academic honesty and will report any form of cheating according to these policies. Please review the terms and penalties of the Student Honor Council’s Code of Academic Integrity at: [http://www.shc.umd.edu/code.html](http://www.shc.umd.edu/code.html). According to this code plagiarism is defined as “intentionally or knowingly representing the words or ideas of another as one’s own in any academic exercise.” This is regarded as a form of academic dishonesty and suspected cases of plagiarism will be referred to the Honor Code for subsequent action. The grade of F is listed on the transcripts of individuals found to have plagiarized work; this grade means an F was received because of academic dishonesty.”

You can learn a lot from working through problems with others, and for this reason collaboration is encouraged in this course. However, collaboration can only work effectively if you do so responsibly, and follow acceptable practices of academic honesty. If you work together, you should:

- Write up your assignment **yourself**. If you have edited or simply copied your friend’s assignment, then you have not written up your assignment yourself.
- Don't hand in something that your collaborator came up with that you don't fully understand - this is plagiarism, and it is dishonest.
- If you work as part of a group, you **must write this at the top of your assignment**, and give the names of the people you worked with. If you fail to do this, it will be treated as plagiarism.
- If you are in any doubt, consult the **University Policy on Academic Integrity**. We treat cases of academic dishonesty seriously.