

# Psych 321: Revolutions in Neuroscience

Fall 2016

Wednesday 1:30-4:00 PM, Observatory

**Professors:** Mary Ellen Kelly, PhD, mkelly@haverford.edu  
Laura Been, PhD, lbeen@haverford.edu

**Office hours:** by appointment

**Course Description:** The field of neuroscience is a multidisciplinary, dynamic field exploding with new discoveries and technological advancements. Every week there are new reports that further illuminate the workings of our brain and move us one step closer to a better understanding of human behavior. *With all this momentum moving forward, what can be gained by revisiting the past.*

This course will survey several key, revolutionary developments in the field of neuroscience that produced a paradigm-shift in our thinking of brain and behavior. It is these 'shifts' that transformed long held beliefs of nervous system functioning, altered our methodological and philosophical approaches to their study, and produced monumental leaps in the understanding of the nervous system. This course will discuss not only the science of these 'revolutions' but also provide an historical and personal context to the science. We will evaluate critically the environment that produced such insights and, with a new perspective on issues, move forward to the present day and discuss the modern approaches and theorems.

Throughout the course, we will introduce students to historical figures that impacted the field of neuroscience, These individuals trained as psychologists, physiologists, neurobiologists, anatomists, and neurologists. Through exposure to the diversity of approaches, it is hoped that students will be reminded that the boundaries that define the disciplines of neuroscience are blurred, and that it is the language of all these subdisciplines, that continue the advance of modern neuroscience.

**Each section of the course will culminate with a visit from a current researcher in the field whose studies continue to advance our understanding of the brain.** The visiting researcher will lead an in-class discussion about their research, as well as the path they took to get to their current position. In addition, some visitors will give a public research talk in the evening as part of the Distinguished Visitors lecture series. *Attendance at the Distinguished Visitor lecture is required of all students in the course.*

**Textbook and Readings:** There is no textbook for this course. Background readings (e.g., review articles and book chapters) and primary literature (journal articles) will be distributed electronically via the course Moodle site.

**Prerequisites:** Prior completion of Psyc 100 and Psyc 217 or an equivalent course is required. Completion or concurrent enrollment in Psyc 200 is recommended. If you do not meet these requirements, pre-approval by the instructor is required.

Attendance: In addition to completing assignments, students are expected to participate in the course by presenting and discussing papers, and attending Distinguished Visitor lectures. These factors all will contribute significantly to the final grade. Consequently, if you are absent from a class or lecture without an adequate explanation (see below), you will not get participation credit for that class.

Missed attendance and/or presentation:

- If you miss a class for any reason, you must contact a professor (in person, by phone, or by e-mail) within 24 hr of the missed class. In addition, there must be a legitimate reason (e.g., serious illness) for missing a class.
- In those cases for which a legitimate reason is established, the credit for that particular class will not be counted in the overall participation credit for the course. This means that the remaining course participation will count more to your final grade than it would have otherwise. That is, more depends on less.
- If you miss your presentation and have established a legitimate reason, we may move your presentation to another class period, if this is possible. If not, then the credit for that particular presentation will not be counted in the overall presentation credit for the course. This means that the other presentation will count more for your final grade than it would have otherwise.
- Missing class and/or presentation without a legitimate excuse will result in a mark of **0 points** for participation and presentation (if applicable).

**Grading:** There are 100 possible points in this course:

Thought Papers / Exercises	25 points
Presentations	25 points
Research Proposal	25 points
Participation	25 points
Total Possible Points	100 pts

**Grading Scale:**

94-100 pts = 4.0

77-79 pts = 2.3

90-93 pts = 3.7

73-76 pts = 2.0

87-89 pts = 3.3	70-72 pts = 1.7
83-86 pts = 3.0	67-69 pts = 1.3
80-82 pts = 2.7	63-66 pts = 1.0

At the end of the semester, we will calculate your grade and determine if we believe it correctly reflects your achievement in this course. Final grades will be assigned at our discretion.

Thought Papers / Exercises: Each week, we will post a thought question or exercise for the following week's reading. You will write a short paper or complete a short exercise in response to that question/prompt. These papers and exercises are designed to stimulate your thinking and processing of the course material and to help us focus seminar discussion on what resonated most with the class. Prompts will be posted by Saturday evening. **Your response is due no later than 5 PM the day before class.**

Presentations: For each unit, students will work in groups to present and lead discussion on *pre-approved* empirical papers (journal articles, NOT review articles or book chapters) related to the unit. The presentation should be around 45 minutes including time for discussion or questions. In the presentations, we expect students to briefly and clearly summarize the problem that the paper addresses as well as describe and critically analyze the methods, results and interpretations. Prepared slides and/or handouts are encouraged. Although you will be working in group, you will be graded individually. ***Additional background reading, over and above what is assigned, is essential for presenters.***

Research Proposal: As a capstone to this course, you will use the knowledge and skills you have gained to write a research proposal. More information about the proposal assignment will be given during class.

Participation: Your active participation in the seminar is **essential** for success in this course. We expect all students to come to seminar having critically read the assigned readings. Bring questions about the papers with you to class to assist in talking about the material. Most importantly, be prepared to ask and answer both specific and general questions about these papers.

**Classroom policies:** Please silence your phones and put them away during class. Students may use laptop computers or tablets to take notes, but please refrain from using your devices for non-class-related activities during class. Lecture slides are typically not posted before class, as we feel that it discourages active learning, but may be made available after class if we feel they are a useful study aid. Please do not audio-record any portion of lectures without explicit permission to do so. Questions and discussions are welcome and encouraged. Please be respectful of your classmates at all times.

**Academic Integrity:** You are expected to abide by Haverford's Honor Code. Academic dishonesty of any kind will not be tolerated.

**Disability Statement:** Haverford College is committed to supporting the learning process for all students. Please contact me as soon as possible if you are having difficulties in the course. There are also many resources on campus available to you as a student, including the Office of Academic Resources (<https://www.haverford.edu/oar/>) and the Office of Access and Disability Services (<https://www.haverford.edu/access-and-disability-services/>). If you think you may need accommodations because of a disability, you should contact Access and Disability Services at [hc-ads@haverford.edu](mailto:hc-ads@haverford.edu). If you have already been approved to receive academic accommodations and would like to request accommodations in this course because of a disability, please arrange to meet with one of the instructors at the beginning of the semester (ideally within the first two weeks) with your verification letter.