



BIOLOGY/PSYCHOLOGY 447

NEUROSCIENCE SEMINAR: A CAPSTONE COURSE FOR STUDENTS MINORING IN NEUROSCIENCE

Instructor: Dr. Meyer-Bernstein

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Class Location: BERRY104

Class Time: Monday 2-5 pm

Office Hours: by appointment

Office Location: 6 Green Way, 2nd floor

COURSE OVERVIEW:

This course is designed to expose you to a wide range of topical research in the field of neuroscience and encourage critical thinking and effective communication skills.

REQUIRED READING AND MATERIALS:

Readings will be handed out in class or available on OAKS.

STUDENT LEARNING OUTCOMES

- Students will demonstrate effective communication skills.
- Students will show evidence that they can apply research methods in neurobiology to address questions related to brain and behavior.
- Students will demonstrate effective critical thinking skills by evaluating primary research in the field of neuroscience.

COURSE POLICIES AND PROCEDURES:

The class will meet for 180 minutes, once per week. **Class attendance is mandatory.** If there is an emergency (i.e. you are in the ER) and you must miss a class, contact me immediately. A make-up assignment will be given. If you miss more than one class, you will fail the course and not complete the minor in Neuroscience. **Attendance will be taken at each class meeting.**

Student Assignments and Expectations

25%

Writing: During the course of the semester, you will be asked to write concise descriptions of your ongoing research. This will be in the form of an abstract (10%) and a poster (15%) to be submitted to and presented at the SYNAPSE meeting. Students will develop and present a poster on their research at the SYNAPSE meeting to be held on April 2 at Presbyterian College – Clinton, SC. Keep this day open on your schedule! We will work out transportation and registration as it becomes necessary this semester. Assignments will be graded using the poster and oral presentation rubrics provided to you.

20%

Student Research Seminars: The ability to create and deliver a good research seminar will also be a focus of the course. At the beginning of the semester, each student will present a brief seminar of their work. This will not be graded, but will be critiqued using student evaluations and class discussions. Using this feedback, and faculty research presentations as models, each student will present their final Bachelor's Essay project at the end of the semester in a public seminar. This will be graded using the presentation rubric provided to you.

20%

Journal Club Presentations/Discussions: A significant portion of this course will involve listening to and learning about topical research in the field of neuroscience. Formal research talks by local neuroscientists from CofC and MUSC will be given to the class and open to the public. Prior to the seminar, students enrolled in the class will read and discuss primary literature related to the upcoming presentation in a journal club format. Each student will present one primary research paper and lead discussions for that topic. This component of the course is to make you aware of the experimental methodology, design and data analysis used in neuroscience. It is also meant to afford you the opportunity to further develop your critical thinking and presentation skills.

35 %

Class Participation/Preparation: Students will be evaluated on their class participation and preparation throughout the semester. In order to receive full credit, a student must come to class with all materials and assignments thoroughly prepared and must actively engage in thoughtful and intellectual discussions during the class period.

Grade Assignment:

Your final grade in the course will be based on a percentage of points based on the College of Charleston grading scheme:

<u>% of Total Points</u>	<u>Grade Earned</u>
93% and higher	A
90 – 92%	A-
87 – 89%	B+
83 – 86%	B
80 – 82%	B-
77 – 79%	C+
73 – 76%	C
70 – 72%	C-
67 – 69%	D+
63 – 66%	D
60 – 62%	D-
< 60%	F

TENTATIVE SCHEDULE:

The following schedule represents a tentative plan for the course.

	Date	Subject / Topic	Assignment
1	11 January	Course Introduction	
2	18 January	No Class – Martin Luther King holiday observed	
3	25 January	Student Research Presentations (5 minutes each)	5 minute Powerpoint
4	05 February	Neuropalooza (THIS IS A FRIDAY!)	
5	08 February	Dr. Jennifer Bestman, Department of Psychology, CofC Topic: Mechanisms of neural circuit development Presenting students: Alison Bruce, Patricia Cooney	Completed JC summaries 2 questions per paper
6	15 February	Dr. DeAnna Adkins, Department of Neurosciences, MUSC Topic: Brain injury recovery using brain stimulation Presenting students: Brenna Casey, Leslie Sawyer	Completed JC summaries 2 questions per paper
7	22 February	SYNAPSE ABSTRACTS due in class.	SYNAPSE abstract 3 copies
8	29 February	Dr. Jason Vance, Department of Biology, CofC Topic: TBD Presenting students: Zachary Diamond, Joshua Goodman	Completed JC summaries 2 questions per paper
9	07 March	No Class – Spring Break	
10	14 March	Dr. Abby Meyer, University of North Georgia Topic: A novel approach to measuring cortical P300 activity in rats Presenting Students: Joanna Lloyd, Greer McKendrick	Completed JC summaries 2 questions per paper
11	21 March	SYNAPSE POSTERS due in class. Bring an electronic version of your poster.	Completed poster
12	28 March	Ben Siemsen, PhD candidate, MUSC Topic: Cocaine-Induced Deficits in Excitatory Neurotransmission and Structural Plasticity in the Prefrontal Cortex of Rats Presenting students: Danielle Schwartz, Kelsey Volmer	Completed JC summaries 2 questions per paper
13	04 April	Frontier's in Neuroscience (MUSC), Dr. Amy Arnsten, Yale University Note: This is an all-day event.	TBD
14	11 April	Logan Dowdle, Department of Neurosciences, MUSC, PhD student Topic: Noninvasive brain stimulation in the treatment of substance use disorders Presenting student: Kelly Voisin	Completed JC summaries 2 questions per paper
15	18 April	Student Research Seminars (30 minutes each)	BE Presentations
16	21 April	THURS:Student Research Seminars	

Important Dates:

Friday, Feb 5, 2016 Neuropalooza 2016

Friday, 26 February, SYNAPSE Abstract Submission Deadline for travel awards

Friday, 4 March, SYNAPSE Abstract Final Deadline

Saturday 2 April, SYNAPSE at Presbyterian College, Clinton

Monday 4 April, MUSC Frontier's in Neuroscience Research Day

Class agendas

Guest speakers:

2:00-2:30	Paper presentation Student #1
2:35-3:05	Paper presentation Student #2
3:10-3:40	Group Discussion lead by Students #1 and #2
3:45-5:00	Research Seminar presentation/Q&A

Student PowerPoint presentations should be 30 minutes in length for journal club. Students should be prepared to lead a 30 minute discussion.

Student presentations MUST be emailed to me (meyerbernsteine@cofc.edu) by midnight on the Friday prior to your assigned day.