Edits noted here:

Aug 22: Note- information in the syllabus and course schedule is subject to change through the semester. Updated versions will be uploaded to Sakai, and any changes to the current version will be noted here at the top of the syllabus.

Psychology 434: Cognitive Neuroscience

Fall 2018/ 3 Credit Hrs
Section 001: MWF 1:25-2:15pm
Gardner Hall 307

Course Description and Goals:

This course will explore higher mental processes including attention, memory, language, and emotions with an emphasis on the neural mechanisms that form the substrates of human cognition.

Prerequisites: 1) PSYC 101, 2) PSYC 210 or 215, and 3) one of PSYC 220, 222, 225, 230 or BIOL 450, 455

This course was designed to:

1	2	3	4
Introduce you to the kinds of questions Cognitive Neuroscientists are interested in.	Provide an understanding of the methods used to answers these questions and the ability to compare them, and pick the appropriate method.	Teach you to understand, interpret and even design studies to probe these types of questions.	Continue the development of your critical thinking and writing skills in the context of the other goals.

Instructor:

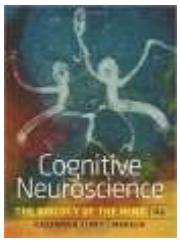
Dr. Vicki Chanon
Email: vchanon@unc.edu
Office: 236 Davie Hall
Office Phone: (919) 962-5081
Office Hours: Wed 1:30-2:30pm and by appointment

Graduate Research Consultant*
Jonathan Parsons
Email: jtpar@live.unc.edu
Office: 103 Davie Hall
Office Hours: By appointment and scheduled prior to research assignements.

In order to allow us to devote proper attention to each student who attends office hours, you will need to sign up for a specific time slot using the sign-up tool in Sakai. This means you will need to come to office hours with your questions and thoughts organized, because you will have a limited amount of time before the next student is scheduled. If none of the scheduled times works for you, or if you the time slots are filled, you can email me to set up an appointment at a better time. **Don't hesitate to email-we want to meet with you!**

** GRC's provide faculty and classes invaluable support by guiding students through their research projects from beginning to end. They can help students learn particular research methodologies and be available for consultation throughout the semester. The GRC Program is sponsored by the Office for Undergraduate Research and undergraduates who are interested in the Carolina Research Scholar Program may be able to use this course to meet a research-exposure course requirement of the program. Please visit the OUR website to learn more about the program and to learn about how you might engage in additional research opportunities while you are here at Carolina. https://our.unc.edu/*

Texts and Materials



- Gazzaniga, MS, Ivry, RB & Mangun GR (2016). *Cognitive Neuroscience (4th Edition)*. Elsevier.
  NOTE: *We will not have time to cover every experiment covered in the text, I make an effort to specify page numbers for the readings, but you should focus on the info covered in class for exams.*
- Additional primary literature readings, pod casts and videos will be posted on Sakai throughout the semester.
- You will also be required to bring paper and pen for some in class participation activities.
- Technology:
  - Sakai will be used to post details for additional reading assignments and paper topics. As schedules for topics we are covering are updated, the syllabus in Sakai will be updated.
  - Poll Everywhere will be used to keep track of some participation credit. **NOTE: EVEN IF YOU HAVE REGISTERED PREVIOUSLY- YOU NEED TO RE-DO IT. UNC HAS NEW POLICIES/GUIDELINES**

Class Structure

Tips for succeeding in this class:

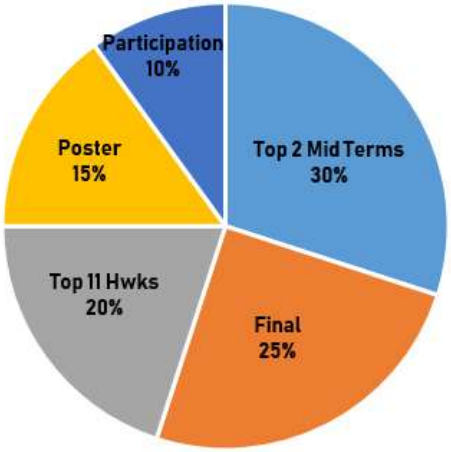
Class format will be a mixture of lecture, activities, and groups discussions in order for you to gain a better understanding of concepts. We will be covering the material quickly in class in interactive ways, therefore it is essential for you come to class prepared having completed the reading and ready to participate.

As college students, you are all adults and I expect you to take personal responsibility for your learning. You should:

- **Budget your time well.** Keep an eye on due dates for this and your other classes and anticipate weeks that may be busy so you can begin studying and complete assignments ahead of time. Having overlapping due dates/ exams in this and other classes is NOT an excuse to schedule any make-up work.
- **Come to class on time and prepared.** In order to stay on schedule, we will need to move through some of the topics fairly quickly in lecture, which means you need to come to class having done the reading (or listening/ watching when there are videos or podcasts) and making note of any questions or fuzzy parts of the material ahead of time.
- **Seek out help if you are struggling.** UNC's Learning Center (learningcenter.unc.edu) is an amazing resource. There are a number of well written short videos and handouts on topics about studying, taking notes, strategies for taking multiple choice exams, etc. All the material is based on research studying which strategies lead to the highest success in learning. If there is anything that you are having a hard time with, I am always happy to meet!
- **Get any info from missed classes.** It is expected that you will attend class regularly and you are responsible for anything covered in class. If you need to miss class for any reason, it is your responsibility to get any missed notes or announcements from a classmate. It is highly recommended that you trade contact information with a couple of classmates with whom you can trade notes on the occasion that any of you needs to miss class for any reason.
- **Treat me and your classmates with respect.** I encourage you all to speak up in class and contribute to a lively and fun discussions. This means that some differing opinions may arise and as adults you should respect differing views. You are all are students at one of the top universities in the world; you all have a wealth of intelligence and everyone's ideas are valuable. Also, I value the opinions and perspectives of individuals from all diverse backgrounds. My goal is that all students' needs are addressed in this course and all perspectives are valued. I broadly define diversity to include race, gender, national origin, ethnicity, religion, social class, age, sexual orientation and physical and learning ability. I strive to make this classroom an inclusive space for all minority student groups. I value your input to improve the climate of my classroom.
- **Stay on task during class**- no emailing, social media, shopping, or other activities not related to the course and what we are currently doing in class. You should remain on task whether listening to me lecture or working on an activity, and avoid distracting conversations when others are trying to listen or work.

Grades

Grades will be based on a cumulative final exam, three semester exams, homework assignments/ short papers and class participation.



Exams. All exams will be multiple choice. My exams tend to require higher order thinking and I have been told they can be challenging. I would highly recommend visiting the Learning Center website to get some ideas in studying that will help you learn the material well enough to be successful on higher order multiple choice exams.

There will be 3 midterm exams, which will not be explicitly cumulative (much of the info throughout the course builds on the first few chapters, but there will not be explicit questions about topics in the earlier chapters.) You will be able to drop the lowest of your 3 semester exams. If you miss one of the exams for any reason, this will count as your dropped exam. Make up exams will NOT be given. The average of the 2 remaining exams will be worth **30%** of your course grade.

The final exam *is cumulative* and will be worth **25%** of your grade. With a cumulative final, it is highly recommended that you review each of your semester exams after they are graded. The final exam grade **CANNOT** be dropped.

Homework is due AT THE BEGINNING of class and can be submitted electronically via the Sakai system, or as hard copies before class begins. If you submit your paper electronically, it needs to be done BEFORE class begins on the day it is due or it will not be counted. YOU ARE RESPONISBLE FOR MAKING SURE YOUR ASSIGNMENT (THE CORRECT VERSION) WAS UPLOADED TO SAKAI SUCCESSFULLY, SO BE SURE TO CHECK IT AFTER YOU SUBMIT IT. If you have uploaded the wrong version, you can email me the correct version *before the assignment is due*. The format of the homework will vary, but you can expect between ½- 1½ pages typed for each assignment. The topics for the homework will be discussed in class and posted on Sakai before they are due. There will be 14 homework assignments through the semester and they will be graded on the below scale:

- Good= 100
- Satisfactory= 75
- Poor= 50
- Missing= 0

Homework assignments may NOT be submitted late. If you do not turn in the assignment on time it will count as a zero. You can drop your 3 lowest homework assignments. The average score of the remaining 11 homework assignments is worth **20%** of your grade. You have 1 week after a homework grade is posted to submit, in writing, any questions about the grade, after which the grade will not be changed.

Class Participation and Attendance. This course is designed for students to be active participants in the learning process and participation will be worth **10%** of your grade. Your participation grade is based on your participation in the in class activities and questions about the reading/previous lectures throughout the semester (sometimes through Poll Everywhere and sometimes on paper).

There will be 24 randomly chosen classes where you can earn your participation points. You need submit your Poll Everywhere responses or turn in the in class activity for 20/24 classes to get 100% on your participation grade. To receive participation credit on a day in which we use Poll Everywhere, you will need to submit answers for at least 50% of the questions. You are required to be in class to receive credit for Poll Everywhere responses. There are ways to tell, and if you are caught responding to Poll Questions when you are not in class, you will not get credit and 5 points will be deducted from Participation Grade at the end of the semester. You are responsible for making sure you

are logged into Poll Everywhere and/or you name is written legibly on your paper. For each participation credit you miss after 20 you will lose 5 points from your participation grade. I will use the "Attendance" tool in Sakai to keep track of participation credit, where "present" would indicate you received participation credit for that course period and "absent" would indicate you did not either because you were not in class, or you did not have a satisfactory contribution (e.g. less than 50% of the Poll Everywhere questions answered).

Even for an excused absence, you cannot make up a missed participation credit. You are able to miss 4 credits without penalty, so any excused absences should be covered in those 3. Participation credit for a given class will be posted within 1 week. After that you will have 2 more business days to note, in writing, any errors made in entering grades, after which the grade will not be changed (i.e. Do not wait until after the final exam to tell me you are missing a credit from August 22nd).

While there is no grade given specifically for attendance, the book and the notes that will be posted online will not tell you everything you need to know for the exam, and there will be in class discussions and activities that will be completed that will help you with your homework, help you prepare for exams, and will contribute to your participation grade. You are responsible for EVERYTHING covered in class including the material, announcements, etc. Therefore, if you want to do well, you need to come to class, and IF YOU DON'T WANT TO COME TO CLASS ON A REGULAR BASIS, YOU MAY WANT TO DROP THIS CLASS.

Posters At the end of the semester, we will have 3 class periods in which student will present posters. EVERYONE's posters are due AT THE BEGINNING of class on the 1st presentation day- regardless of when you are presenting- and can be submitted electronically via the Sakai system (in which case you need to bring a hard copy the day of your presentation), or as hard copies before class begins. If you submit your poster electronically, it needs to be done BEFORE class begins on the day it is due and it will be counted late if it is submitted after 11:15am. For each day a poster is late, it will lose 10 (out of 100) points. You will be graded on the content, format and presentation of the poster. There will be a detailed rubric on Sakai and we will work throughout the semester to make sure you have time to perfect your content!

Course Grade. The typical 10 point grading system will be used with 3 points on either side being – and + grades (80-82 = B-, 83-86 =B, and 87-89 = B+, etc.)

To calculate your grade: (Average of 2 highest semester exams * 30%)+(Final exam * 25%)+ (Poster grade * 15%) + (Average of top 11 homework grades *20%) + (participation grade *10%)

If you have any questions about the grading system at any point in the semester just ask! ☺

Honor Code

The University of North Carolina at Chapel Hill Honor Code can be found at http://instrument.unc.edu/ You are responsible for knowing and following it!

Schedule of Course Topics

Note: This is a rough and tentative schedule and I reserve the right to change it based on how quickly we move through the material. Additional readings will be posted to Sakai throughout the semester.

Week	Day	Date	Lesson: Topic	Reading	Assignment Due
Week 1	Wed.	22-Aug	1: Intro to the Course		
	Fri.	24-Aug	1: Brief History & 2: Structure & Function of Nervous System	Syllabus & pgs 5 -10 & 23-26	Register Poll Ev. & Hwk 1
Week 2	Mon.	27-Aug	2: Structure & Function of Nervous System	pgs 27-36	
	Wed.	29-Aug	2: Structure & Function of Nervous System	pgs 37-49 (skip "How the brain works" box)	
	Fri.	31-Aug	2: Structure & Function of Nervous System	pgs 49-57	Hwk 2
Week 3	Mon.	3-Sep	**LABOR DAY: NO CLASS**		
	Wed.	5-Sep	3: Methods	pgs 78-90	Hwk 3
	Fri.	7-Sep	3: Methods	pgs 90-104	
Week 4	Mon.	10-Sep	3: Methods	pgs104-110 & "Cog Neuro toolkit" box on 112 & Bennett et al (2009) on Sakai	
	Wed.	12-Sep	3: Methods	pgs 110-116	
	Fri.	14-Sep	3: Methods		Hwk 4
Week 5	Mon.	17-Sep	Review		
	Wed.	19-Sep	**EXAM 1**		
	Fri.	21-Sep	4: Hemispheric Specialization	pgs 121-133 (skip "How the brain works" box)	
Week 6	Mon.	24-Sep	4: Hemispheric Specialization	pgs 133-150 &156 &158	Hwk 5
	Wed.	26-Sep	4: Hemispheric Specialization	Haberling et al. (2011) on Sakai	
	Fri.	28-Sep	5: Sensation & Perception	pgs 167-176	
Week 7	Mon.	1-Oct	5: Sensation & Perception	pgs 176-184	
	Wed.	3-Oct	5: Sensation & Perception	pgs 184-197	Hwk 6
	Fri.	5-Oct	5: Sensation & Perception		
Week 8	Mon.	8-Oct	6:: Object recognition	pgs 224-228 & Liu (2018) on Sakai	Hwk 7
	Wed.	10-Oct	**UNIVERSITY DAY- NO CLASS**		
	Fri.	12-Oct	6: Object recognition	pgs 236-241	Hwk 8
Week 9	Mon.	15-Oct	Review		
	Wed.	17-Oct	**EXAM 2**		
	Fri.	19-Oct	**FALL BREAK- NO CLASS**		
Week 10	Mon.	22-Oct	7: Attention	pgs 280- 293	
	Wed.	24-Oct	7: Attention	pgs 293-305 (skip "How the Brain Works" box) & Hopfinger & West (2006) on Sakai	Hwk 9
	Fri.	26-Oct	7: Attention	pgs 311-319 & 276-279	
Week 11	Mon.	29-Oct	7: Attention		Hwk 10

	Wed.	31-Oct	8: Memory	pgs 379-384	
	Fri.	2-Nov	8: Memory	pgs 384-393	Hwk 11
Week 12	Mon.	5-Nov	8: Memory	Mull & Seyal (2001) on Sakai	
	Wed.	7-Nov	8: Memory	pgs 394-397 & 402-410 (skip "How the Brain Works" box)	
	Fri.	9-Nov	8: Memory	pgs 410-413	Hwk 12
Week 13	Mon.	12-Nov	Review		
	Wed.	14-Nov	**EXAM 3**		
	Fri.	16-Nov	9: Emotion	pgs 425-434	
Week 14	Mon.	19-Nov	9: Emotion	pgs 437-454	Hwk 13
	Wed.	21-Nov	**THANKSGIVING BREAK- NO CLASS**		
	Fri.	23-Nov	**THANKSGIVING BREAK- NO CLASS**		
Week 15	Mon.	26-Nov	Review		
	Wed.	28-Nov	**POSTERS**	Day 1 Abstracts on Sakai	**All Posters Due**
	Fri.	30-Nov	**POSTERS**	Day 2 Abstracts on Sakai	
Week 16	Mon.	3-Dec	**POSTERS**	Day 3 Abstracts on Sakai	Hwk 14
	Wed.	5-Dec	Review		

Tues.	**11-Dec**	**FINAL EXAM @ noon**
Thurs.	6-Dec	Make-up final