

Cognitive Neuroscience

Psychology 315

Fall 2018

10:00 – 11:15, Tuesday and Thursday

Bullock Science Center, Room 112W

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Office Hours: Tuesdays/Thursdays 12:00-1:00, or by appointment (please come see me!)

Human cognition and perception and their neurophysiological correlates as revealed by functional imaging techniques and clinical populations. Selected topics include basic neuroanatomy and brain imaging techniques and their application to the study of attention, memory imagery, concept formation, language, problem solving, creative thinking and intelligence.

Prerequisite: PSY-101 or PSY-102 (but PSY-101 is preferred), PSY-206, PSY-207. This is a 4-credit course. In addition to in-class time, you will be spending a minimum of 3 hours per week in preparation for our class sessions, including completing textbook and outside reading assignments and preparing for in-class discussions. You should also plan to spend an additional 7 hours per week studying for exams and working on written individual or group assignments.

After completing this course, students should be able to do the following:

- ❖ Demonstrate knowledge of the history, methods, questions, findings, theories, and challenges associated with the scientific study of cognitive neuroscience
- ❖ Identify and describe techniques used in cognitive neuroscience research
- ❖ Describe the brain functions and structures that underlie various cognitive abilities
- ❖ Read and write about research articles in the field
- ❖ Apply knowledge of cognitive neuroscience findings to everyday life

These objectives will be met through applied course assignments involving listening, discussing, reading, and writing.

The American Psychological Association's (2013) Guidelines 2.0 for the Undergraduate Psychology Major consists of five goals, which are being used as the student learning objectives for Agnes Scott's Psychology majors. Three of these learning goals are the focus of our 300-level courses.

Goal 1. <u>Knowledge Base in Psychology</u>	Goal 2. <u>Scientific inquiry and critical thinking</u>	Goal 4. <u>Communication:</u>
1. Students will describe key concepts, principles, and overarching themes in psychology. 2. Students will develop a working knowledge of psychology's content domains. 3. Students will describe applications of psychology.	1. Students will use scientific reasoning to interpret psychological phenomena. 2. Students will demonstrate psychology information literacy. 3. Students will engage in innovative and integrative thinking and problem solving. 4. Students will interpret, design and conduct basic psychological research.	1. Students will demonstrate effective writing for different purposes. 2. Students will exhibit effective presentation skills for different purposes. 3. Students will interact effectively with others.

To work on these objectives, students will take tests and complete a comprehensive final exam or paper. Students will write research proposals or papers using APA writing style. Students will also give presentations in the course. Some of the work in the course will involve working with others.

CLASS COMPONENTS

Test One	100	TOTAL	500
Test Two	100		
Final Exam	130	A = 93 - 100	A - = 90 - 92
Individual Literature Review	50	B+= 87 - 89	B = 83 - 86
Group Research Proposal	50	B- = 80 - 82	C+ = 77 - 79
Group Presentation	20	C = 73 - 76	C - = 70 - 72
Weekly Activity	15	D+ = 67 - 69	D = 63 - 66
What's trending? #neurotalk	15	D - = 60 - 62	F = 59 or less
Attendance Quiz	20		

REQUIRED READING MATERIAL

Banich, M. T. & Compton, R. J. (2018). *Cognitive Neuroscience*: 4th Edition

Any assignments uploaded on Moodle should be a pdf or Word format. It is your responsibility to ensure that files upload correctly.

Reading Assignments: In this course the textbook provides a good foundation of cognitive neuroscience. In class we will apply this material using demonstrations, group discussions, videos, surveys, and lecture. Additional related information not in your textbook will be covered in class. Students also should be aware of the fact that not all of the material in the textbook can be covered in class, but they are responsible for knowing all of the material in the textbook even if it is not covered in class.

Tests and Final Exam: For this class there will be two in-class (100 points each) and one final exam (130 points total: 100 points from new material; 30 from old material). The tests will have short-answer and multiple-choice questions from the material covered in class and the textbook. Students are expected to take all tests on the scheduled dates. If an extreme circumstance (illness and workload do not apply) arises then the student should contact the professor prior to the test and the professor will decide what will be done.

To do well on the tests, students must come to class and read the class materials very carefully. Historically, students that have done the best have read the textbook carefully several times, taken notes from the textbook and lectures, and began studying several weeks prior to the tests.

Weekly Mindfulness Activity: Each week you will complete a brief assignment geared towards improving your mindfulness and your study habits, approach to life, etc. More detail will be provided in class.

What's Trending? #neurotalk: Cognitive neuroscience is a fascinating field and many new and exciting discoveries pop up every day. The What's Trending assignment will involve a discussion board about an article or idea that I will post. Once the topic goes up, you will be notified and have one week to make a post and respond to a classmate.

Research Project: The research project will consist of three primary components: Individual Literature Review, Group Research Proposal and Group Presentation. (Group work?! Why?) I'm glad you asked! Here's why: In almost all workplaces today, working with others is common (not to mention the many creative and practical benefits of working

with others). Dealing with possible interpersonal conflicts and allocating work fairly are critical skills to have. Through this process, you will develop these skills and I will help provide you with additional tools for working in a group.

ALL COMPONENTS OF THE RESEARCH PROJECT MUST ADHERE TO APA STYLE!!

Individual Literature Review: You will write a research literature review on one of the special topics (to be provided in class). You can start with the information in your textbook, but you will need to reference the primary scientific literature as well (5-7 pages excluding title page, abstract page & references). Further details on the literature review, a rubric for grading, and other details will be provided during the semester. This is worth a total of 50 points.

Group Research Proposal: You will be grouped with two others who wrote literature review papers on the same topic. You will combine your newfound expertise to write a research proposal. This paper will summarize the existing knowledge on the topic (i.e., combine and integrate your literature reviews) and propose the “next important step” in the form of a research idea. Further details on the group research proposal, a rubric for grading, and other details will be provided during the semester. This is worth a total of 50 points.

Group Presentation: You and your groupmates will put together a presentation to teach the rest of the class about your topic and describe your research proposal idea. The final version must be in APA style. Further details of the paper, and a rubric for grading, will be provided during the semester. This is worth a total of 20 possible points.

Attendance “Quiz” Points: It is important to attend lectures in this course, as lectures will involve demonstrations, classroom activities, films, and discussion of material not covered in the textbook. Students are expected to attend class regularly, as regular attendance will contribute to a better overall understanding of course material.

Attendance will be taken at every class meeting. This will be done in the form of a “quiz” at the *beginning of each class*. I will present you with a question(s) and give approximately 5 minutes to make your response without referring to your textbook or notes. Your answer(s) will be submitted with your name and this will serve as your attendance. **IF YOU ARE LATE AND ARE NOT PRESENT BEFORE THE ATTENDANCE QUIZZES ARE COLLECTED, YOU WILL NOT RECEIVE POINTS!**

You will receive 1/2 point just for being present and another 1/2 point if you get the correct answer – thus, you can earn up to 1 point for everyday that you attend class. There are 24 class meetings this semester (excluding test days). As you will see detailed in the “Point Allocation” section, attendance quizzes contribute 20 points to your total score. What this means for you is that if you exceed 20 points (by attending everyday or only missing a few days and getting answers correct), these will be extra points added to your total score. You can miss up to 4 days of attendance quizzes without it impacting your total points. Again, if you are late for class and miss the quiz, you cannot retake it and will forfeit your point for the day. If you have an absence excused by the college (e.g., observed religious holiday, death of an immediate family member, participating in a college sporting event, unplanned hospitalization), see me before the absence to discuss.

This is also a good way for you to help identify areas that you might need to study more. This practice is actually in place to help you! Research suggests that repeated **retrieval** is the most effective way to learn. My goal is that by having you actively retrieve the information throughout the semester, you will better learn and remember the information from the course.

Students are expected to actively participate in class discussions and demonstrations. Students are welcomed and encouraged to share their questions, ideas, and insights during class discussions and lectures as long as they do not dominate the conversations. They are expected to respect the values, beliefs, and rights of others in the classroom. Also, students are expected to pay attention to whomever is speaking in class. Students should NOT text or use computers for reasons other than notes. This means no facebook, twitter, email, itunes, youtube, foursquare, pinterest, or anything unrelated to course material! This behavior not only distracts from your ability to learn in my class, but it disrespects and violates the right of other students to attend class and learn in a focused environment. Any students involved in side-conversations unrelated to class discussion, any of the above activities, or in any other behavior that is potentially disruptive to other students’ learning may lose their attendance quiz point for the day at the Professor’s discretion.

Although every effort will be made to follow the syllabus, I reserve the right to make changes.

OTHER INFORMATION ABOUT THE CLASS

Course Evaluations: Students' feedback about this course is extremely valuable to the professor, the psychology department, and the college administration. Students' comments are taken seriously and the comments are used to improve the course in the future. Students will be asked to complete evaluations of the course at the end of the semester.

Title IX: If you have experienced any form of sexual harassment or violence, dating or domestic violence, or stalking, the college urges you to talk to any faculty or staff member with whom you feel comfortable. Faculty and staff members will support you and inform the college, and the college will respond to the problem through its defined procedures. Agnes Scott has supportive professionals in place to help stop, further prevent, and remedy misconduct that you have experienced. Incidents may also be reported directly to Title IX Coordinator Marti Fessenden (mfessenden@agnesscott.edu, 404-471-6547), Deputy Title IX Coordinator Karen Gilbert (kgilbert@agnesscott.edu, 404-471-6435) or Vice President for Student Affairs and Dean of Students Karen Goff (kgoff@agnesscott.edu, 404-471-6449). You should also feel free to talk to the psychologists or health care professionals in the Wellness Center, or the college chaplain, if you simply need support and do not want the college to initiate any further inquiry. Your discussions with these confidential resources remain confidential.

ADA: Agnes Scott College seeks to provide equal access to its programs, services and activities for people with various abilities. If you will need accommodations in this class, please contact the Office of Academic Advising and Accessible Education (404-471-6150) to complete the registration process. Once registered, please contact me so we can discuss the specific accommodations needed for this course.

Inclusion: This course adheres to the principles of diversity and inclusion integral to the Agnes Scott community. We respect people from all backgrounds and recognize the differences among our students, including racial and ethnic identities, religious practices, and gender expressions. We strive for our campus to be a safe space in which all students feel acknowledged and supported. At the same time, we understand that course content, critical inquiry, and classroom dialogues give us opportunities to examine topics from a variety of perspectives. Such discourse is a defining feature of a liberal arts education, and can compel debates that challenge beliefs and positions, sometimes causing discomfort, especially around issues related to personal identities. While we uphold and preserve the tenets of academic freedom, we request and invite your thoughtful and constructive feedback on ways that we can, as a community of learners, respectfully assist and challenge one another in our individual and collective academic work.

Key dates: **Sept. 3** —last day to add or drop using AscAgnes; **Sept. 7**—last day to add a fall class or change to audit; **Sept. 18**—last day to drop without a W; **Oct. 31**—last day to drop with a W or change to pass/fail.

ACADEMIC HONESTY

The Agnes Scott College honor code embodies an ideal of character, conduct, and citizenship, and is an important part of the College's mission and core identity. This applies especially to academic honesty and integrity. Passing off someone else's work as your own represents intellectual fraud and theft, and violates the core values of our academic community. To be honorable, you should understand not only what counts as academic dishonesty, but also how to avoid engaging in these practices. You should:

- review each course syllabus for the professor's expectations regarding course work and class attendance.
- attribute all ideas taken from other sources; this shows respect for other scholars. Plagiarism can include portraying another's work or ideas as your own, buying a paper online and turning it in as if it were your own work, or not citing or improperly citing references on a reference page or within the text of a paper.
- not falsify or create data and resources or alter a graded work without the prior consent of your professor. This includes making up a reference for a works cited page or making up statistics or facts for academic work.
- not allow another party to do your work/exam, or submit the same or similar work in more than one course without permission from the course instructors. Cheating also includes taking an exam for another person, looking on another person's exam for answers, using exams from previous classes without permission, or bringing and using unauthorized notes or resources (i.e., electronic, written, or otherwise) during an exam.
- not facilitate cheating, which can happen when you help another student complete a take home exam, give answers to an exam, talk about an exam with a student who has not taken it, or collaborate with others on work that is supposed to be completed independently.
- be truthful about the submission of work, which includes the time of submission and the place of submission (e.g., e-mail, online, in a mailbox, to an office, etc.).

You should understand that penalties result from dishonest conduct, ranging from failure of the assignment to expulsion from the college. You should speak with your professors if you need clarification about any of these policies.

Modified Pledge

Students pledge that they have completed assignments honestly by attaching the following statement to each test, quiz, paper, overnight assignment, in-class essay, or other work:

I pledge that I have neither given nor received any unauthorized aid on this assignment.

(Signed) _____

Date	Read BEFORE class!	Topic	Weekly Assignment/Due Dates
TH-Aug 30		Introduction to Course	
T-Sept 4	Ch. 1	Introduction to the Nervous System	1
TH-Sept 6	Ch. 1	Introduction to the Nervous System	
T-Sept 11	Ch. 2	How Neurons Communicate	2
TH-Sept 13	Ch. 2	How Neurons Communicate	Lit Review Topics
T-Sept 18	Ch. 2	How Neurons Communicate	3
TH-Sept 20	Ch. 3	Methods	

T-Sept 25	Ch. 3	Methods	4
TH-Sept 27	Ch. 3	Methods	
T-Oct 2		TEST ONE	5
TH-Oct 4	Ch. 5	Sensation and Perception	
T-Oct 9	Ch. 5	Sensation and Perception	6, #neurotalk
TH-Oct 11		FALL BREAK – NO CLASSES	
T-Oct 16	Ch. 8	Language	7
TH-Oct 18	Ch. 9	Memory and Learning	
T-Oct 23	Ch. 9	Memory and Learning	8
TH-Oct 25	Ch. 12	Emotion	Individual Literature Review Due
T-Oct 30	Ch. 13	Social Cognition	9
TH-Nov 1		TEST TWO	
T-Nov 6	Ch. 14	Psychopathology	10
TH-Nov 8	Ch. 14	Psychopathology	#neurotalk
T-Nov 13	Ch. 15	Brain Development and Plasticity	11
TH-Nov 15	Ch. 15	Brain Development and Plasticity	
T-Nov 20	Ch. 16	Generalized Cognitive Disorders	12, Group Research Proposal Due
TH-Nov 22		THANKSGIVING BREAK – NO CLASSES	
T-Nov 27	Ch. 17	Cognitive Neuroscience and Society	13
TH-Nov 29	Ch. 17	Cognitive Neuroscience and Society	
T-Dec 4		Presentations	14
TH-Dec 6		Presentations	15
Dec. 12-17		FINALS WEEK, Cumulative Final	