PSB 4810/PSY 6930
Neurobiology of Learning and Memory
Spring 2019

Sections: 3383 and 4C38
Tuesdays period 5 (11:45 a.m. - 12:35 p.m.)
Mechanical & Aerospace Engineering Building A (MAEA), room 0303
Thursdays periods 5-6 (11:45 a.m. - 1:40 p.m.)
Computer Sciences/Engineering (CSE), room E119
3 credits

Professor: Dr. Darragh P. Devine
dpdevine@ufl.edu
Psychology Building room 337
273-2174
office hours: Tuesday (12:50-1:40 p.m.) and Thursday (1:55-2:45 p.m.)
(or by appointment)

Required Text: Jerry W. Rudy *The Neurobiology of Learning and Memory* 2nd edition, ISBN # 978-1-60535-230-5. Note – Do not purchase the first edition. The textbook was extensively revised for the second edition.

GENERAL INFORMATION: Human psychological function may be construed as the sum of stored experience interacting with current sensation and awareness. Learning and memory - the encoding, storage, and retrieval of that experience impact upon our motivations and emotions, and influence our current perceptions and behavioural responses to our environment. The purpose of this course is to provide a broad background in the neural basis of learning and memory. How are development and learning related? How do they differ? How is plasticity encoded in neurons? What are the cellular and molecular mechanisms of plasticity? Where and how are memories distributed and stored in the brain? How are they retrieved? We will examine these issues from a variety of perspectives - historical, developmental, genetic, pharmacological, electrophysiological.

GRADING (undergraduate): This course will have three tests and one final exam. Each test will have 50 MC and one short essay (bonus) question. Each of the first three tests will cover only the text and lecture material from the chapters that have most recently been discussed in class. Each of these tests will count 33 ⅓% toward your final grade. The final exam will be comprehensive and can replace the test you missed or on which you did poorly. If you take all the three regular tests and are satisfied with your grade, you may skip the final exam. If you miss a test, or if you do poorly on a test, you can drop that test and take the final exam to replace it. In this case the better test score (regular test or replacement) will count.

The final is the only option for a missed or failed test.
There will be no other makeup tests under any circumstances.

You will need to bring an official photo ID (Gator1, driver's license) to take exams. You will be required to display the ID on your desk during the exam. You will also need a #2 pencil to take exams. Note – If you arrive late for an exam, you may be refused. If any student has completed the exam and left, you will not be permitted to write the exam.

GRADING (graduate): The graduate section of the course will have three tests and one optional final exam (the same tests as in the undergraduate section). Each of these tests will count 25% toward your final grade, and the highest three grades will count toward your final grade. In addition, a short review paper (8-10 pages) will be required, which will count for the other 25% of the final grade. The paper is required, and cannot be replaced by any exam.

The grading scheme is as follows:

A	93-100	A-	90-92		
B+	87-89	B	83-86	B-	80-82
C+	77-79	C	73-76	C-	70-72
D+	67-69	D	63-66	D-	60-62
E	< 60				

A grade of C- or lower will not be a qualifying grade for major, minor, Gen Ed, Gordon Rule or College Basic Distribution credit for undergraduate students. A grade of C+ or lower will constitute a failing grade for graduate students.

WEBSITE: PowerPoint images from lectures will be available for students to review at the course website on E-Learning. It is very important for students to access this site. If you experience any difficulty, contact me as early as possible. Required readings, additional materials, and interesting links will also be posted on this site.

COURSE SCHEDULE: (This is a provisional schedule. The timing of topics covered may change, and therefore the topics assigned to examinations will be adjusted accordingly – details will be described in class. The dates of exams will not change.)

For critical semester dates see http://www.registrar.ufl.edu

Approx. Dates	**Chapter and Topic ***
PART 1 – SYNAPTIC BASIS OF MEMORIES	
Jan 8-10	1. Introduction: Fundamental Concepts and Historical Foundations
Jan 15-22	2. Mechanisms of Synaptic Plasticity: Introduction
Jan 24	3. Modifying Synapses: Central Concepts
Jan 29-31	4. Generating and Stabilizing the Trace: Post-Translational Processes
Feb 5-7	5. Consolidating Synaptic Changes: Translation and Transcription
Feb 11	optional review session – TUR L005, 11:45-12:35
Feb 12	**Exam #1: Chapters 1-5 (all material covered to date)**
Feb 14	6. Consolidating Synaptic Changes: Specific Mechanisms
Feb 19	7. Maintaining the Consolidated Trace
Feb 21	8. Toward a Synthesis
Feb 26	9. Making Memories: Conceptual Issues and Methods
Feb 28	10. Memory Formation: Early Stages
March 5-7	Spring Break – no classes
PART 2 – MOLECULES AND MEMORIES	
March 12	11. Memory Consolidation
March 14	12. Memory Maintenance and Forgetting
March 18	optional review session – TUR L005, 11:45-12:35
March 19	**Exam #2: Chapters 5-12 (all material covered after exam #1)**
March 21-26	13. Memory Modulation Systems
March 28	14. The Fate of Retrieved Memories
PART 3 – NEURAL SYSTEMS AND MEMORY	
April 2-4	15. Memory Systems and the Hippocampus
April 9	16. The Hippocampus Index and Episodic Memory
April 11	17. The MTH System: Episodic Memory, Sematic Memory, and Ribot's Law
April 16	18. Actions, Habits, and the Cortico-Striatal System
April 18	19. Learning about Danger: The Neurobiology of Fear Memories
April 22	optional review session – TUR L005, 11:45-12:35
April 23	***Exam #3: Chapters 13-19 (all material covered after exam #2)***
April 29	optional review session – time and place TBA
May 1	**Exam #4: optional comprehensive final exam**

ADDITIONAL SUPPORT FOR STUDENTS WITH DISABILITIES: Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation.

ACADEMIC HONESTY GUIDELINES: The academic community of students and faculty at the University of Florida strives to develop, sustain and protect an environment of honesty, trust and respect. Students are expected to pursue knowledge with integrity. Exhibiting honesty in academic pursuits and reporting violations of the Academic Honesty Guidelines will encourage others to act with integrity. Violations of the Academic Honesty Guidelines shall result in judicial action and a student being subject to the sanctions in paragraph XI of the Student Conduct Code. The conduct set forth hereinafter constitutes a violation of the Academic Honesty Guidelines (University of Florida Rule 6C1-4.017).

Cheating. The improper taking or tendering of any information or material which shall be used to determine academic credit. Taking of information includes, but is not limited to, copying graded homework assignments from another student; working together with another individual(s) on a take-home test or homework when not specifically permitted by the teacher; looking or attempting to look at another student's paper during an examination; looking or attempting to look at text or notes during an examination when not permitted. The tendering of information includes, but is not limited to, giving of your work to another student to be used or copied; giving someone answers to exam questions either when the exam is being given or after taking an exam; giving or selling a term paper or other written materials to another student; sharing information on a graded assignment.

Plagiarism. The attempt to represent the work of another as the product of one's own thought, whether the work is published or unpublished, or simply the work of a fellow student. Plagiarism includes, but is not limited to, quoting oral or written materials without citation on an exam, term paper, homework, or other written materials or oral presentations for an academic requirement; submitting a paper which was purchased from a term paper service as your own work; submitting anyone else's paper as your own work.

Bribery. The offering, giving, receiving, or soliciting of any materials, items or services of value to gain academic advantage for yourself or another.

Misrepresentation. Any act or omission with intent to deceive a teacher for academic advantage. Misrepresentation includes using computer programs generated by another and handing it in as your own work unless expressly allowed by the teacher; lying to a teacher to increase your grade; lying or misrepresenting facts when confronted with an allegation of academic dishonesty.

Conspiracy. The planning or acting with one or more persons to commit any form of academic dishonesty to gain academic advantage for yourself or another.

Fabrication. The use of invented or fabricated information or the falsification of research or other findings with the intent to deceive for academic or professional advantage.

UF's Academic Honesty Policy is clearly stated in rule 6Cl-4.0l7 Student Affairs: Academic Honesty Guidelines.