LEARNING AND MEMORY

Instructor: Duane Jackson, Ph.D.
Office: MMM- room 224
Laboratory: NMM - room 224
Office Hours: M-W-F: 12-2
Phone: 404-681-7564
Email: djackson@morehouse.edu

Course Description
This course is an empirical and theoretical examination of the processes of learning and memory. The course will look at the origin and history of concepts and theories in learning and memory. For learning the focus will be on habituation, classical and operant conditioning and behaviorist approaches. Although, most of the research findings will come from animal experiments, the relevance of these findings and concepts to understanding human behavior will be discussed. For memory the focus will primarily be on human memory and cognition. Students will be introduced to artificial intelligence and neural networks. Also the course will look at the role of neuroscience on learning and memory.

Course Objectives
1. Students will be able to explain the historical influences on the scientific study of learning and memory.
2. Student will be able to describe general principles of learning and memory as they relate to human and non-human adaptations.
3. Students will be able to describe the role of biology on learning and memory.
4. Student will be able to identify the principles of learning and memory in everyday life.
5. Student will understand and be able to use correctly the jargon of learning and memory.

Course Requirements
There will be three exams (100 points for each exam -- lowest exam score is dropped), five quizzes (25 points for each quiz—lowest quiz score is dropped) Research\Design paper (45 points), one take home assignment (25 points) and a final exam (200 points). As a result of the fact that the lowest exam is dropped, if you miss an exam, for any reason that will be your dropped exam. You will only be allowed to take a make-up exam if you meet all of the following criteria -- 1) you have missed an exam (missed not failed) 2) you have a written excuse from the dean 3) you take the exam within five school days after you return to school. **If you have missed a second exam and cannot meet these criteria, I strongly suggest you drop the course.** There is no make-up for quizzes. There is no individual extra credit, the only time extra credit is possible is when every individual in the class has the same opportunity to earn extra credit.

Grading
Grades will be based on the total number of points earned on the two top exams, one take-home assignment, Research/Design paper, and the final exam. Your final grade will be determined by adding up the total number of points you have earned (maximum possible, excluding possible extra credit, is 570 points).
MAXIMUM POSSIBLE POINTS EARNED APPROXIMATE % OF FINAL GRADE
ASSIGNMENT
TWO TOP EXAMS 200 35.1%
FOUR TOP QUIZZES 100 17.5%
RESEARCH/DESIGN PAPER 45 7.9%
TAKE-HOME ASSIGNMENT 25 4.4%
FINAL EXAM 200 35.1%
TOTAL 570 100%

LETTER GRADE TOTAL EARNED POINTS BASE %
A 513-570 90.0%
A- 504-512 88.5%
B+ 490-503 86.0%
B 456-489 80.0%
B- 447-455 78.5%
C+ 433-446 76.0%
C 399-432 70.0%
C- 390-398 68.5%
D+ 376-389 66.0%
D 342-375 60.0%
F BELOW 342 BELOW 60.0%

Only two things may deviate from the above scale, the lower limit of "C" (399 points) may become slightly lower based on overall class performance and students 2 points (not percentage points), or less below the lower limit of the next highest grade may receive the next highest grade, based on their individual performance.

TAKE HOME ASSIGNMENT
For your take home assignment you will be given a series of experiments in which you will compute the associative strength using the Rescorla-Wagner model.

RESEARCH DESIGN/PAPER
When you take Exam I, You will randomly pick a theory/principle in which your Research/Design paper will be based on. This paper will consist of two sections -- a research section and a design section.

Research Section
You must find the paper in which the theory/principle first appeared in the literature. Give the names of the author(s), title and source of the paper. You must explain the theory/principle and find five papers which support this theory/principle. Discuss each of these papers in detail. Next answer the following questions, 1) Was the theory/principle accepted immediately? 2) Were their opposing theories that were displaced by this theory/principle? 3) Is the theory/principle still in its original form or has it been modified or replaced since its initial conception?

Design Section
For the second part of your paper you must design an experiment that would test a prediction of the theory. Your experiment must contain a question, hypothesis, method section, and even though you will not actually do the experiment, you should have a result section that contains what you think the results would be. Finally you should have a conclusion section. For the method section, identify the dependent and independent variables.

NOTE:
When discussing a paper, in detail, in the Research Section, be sure to answer the following questions.

1. WHAT WAS THE QUESTION?
2. WHAT WAS THE HYPOTHESIS?
3. WHAT WAS THE METHOD?
4. WHAT WERE THE INDEPENDENT AND DEPENDENT VARIABLES?
5. WHAT WERE THE RESULTS?
6. WHAT WAS CONCLUDED?

This paper will be turned in electronically using Turnitin. The text of the paper should be between 8-12 pages, you must also have a separate reference page. This paper is due 11.14.12 by 3:00 PM. If you turn it in after 3:00 pm 11.14.12 but before 3:01 PM on 11.15.12 then 10% will be deducted from you grade. After that it is zero.

**SCHEDULE**

<table>
<thead>
<tr>
<th>TOPIC</th>
<th>WEEK</th>
<th>ASSIGNMENT</th>
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<tbody>
<tr>
<td>INTRODUCTION AND BASIC CONCEPTS</td>
<td>8.21</td>
<td>CH. 1</td>
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<td>TO LEARNING &amp; MEMORY</td>
<td>8.26</td>
<td>A. 1</td>
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<tr>
<td>NEUROSCIENCE, LEARNING &amp; MEMORY</td>
<td>9.2</td>
<td>CH. 2</td>
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<td>9.9</td>
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<tr>
<td>HABITUATION &amp; SENSITIZATION</td>
<td>9.16</td>
<td>CH. 3</td>
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<td>9.23</td>
<td>A. 2</td>
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<tr>
<td><strong><strong>EXAM I CH. 1-3, A. 1-2 AND LECTURES, WEEK OF 9.30</strong></strong>*</td>
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<tr>
<td>CLASSICAL CONDITIONING &amp;</td>
<td>9.30</td>
<td>CH. 4</td>
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<tr>
<td>THE RESCORLA-WAGNER MODEL</td>
<td>10.7</td>
<td>A. 3&amp; 4</td>
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<tr>
<td>INSTRUMENTAL CONDITIONING &amp;</td>
<td>10.14</td>
<td>CH 5,</td>
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<tr>
<td>OPERANT CONDITIONING</td>
<td>10.21</td>
<td>A. 5-7</td>
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<tr>
<td><strong><strong>EXAM II CH. 4 &amp; 5, A. 3-7 AND LECTURES, WEEK OF 10.28</strong></strong>*</td>
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**MEMORY**

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<tr>
<th>TOPIC</th>
<th>WEEK</th>
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<tbody>
<tr>
<td>INTRODUCTION TO MEMORY</td>
<td>10.28</td>
<td>A. 8-9</td>
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<tr>
<td>EPISODIC AND SEMANTIC MEMORY</td>
<td>11.4</td>
<td>CH. 7</td>
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<tr>
<td>SKILL MEMORY</td>
<td>11.11</td>
<td>CH. 8</td>
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<td>*** EXAM III - WEEK OF 11.18 CH. 7 &amp; 8, A. 8-9 &amp; LECTURES***</td>
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<tr>
<td>WORKING MEMORY &amp; COGNITIVE CONTROL</td>
<td>11.18</td>
<td>CH. 9</td>
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Page 3 of 5
CH = chapters in your text book, A = Articles listed below.

REGARDING YOUR FINAL EXAM, 50% OF YOUR QUESTIONS WILL COME FROM EXAMS I-III, QUIZZES 1-5 AND THE REMAINING 50% WILL COME FROM CH. 9, & A. 10-12

Articles


Morehouse College is committed to equal opportunity in education for all students, including those with documented disabilities. Students with disabilities or those who suspect they have a disability must register with the Office of Disability Services (“ODS”) in order to receive accommodations. Students currently registered with the ODS are required to present their Disability Services Accommodation Letter to faculty immediately upon receiving the accommodation. If you have any questions, contact the Office of Disability Services, 104 Sale Hall Annex, Morehouse College, 830 Westview Dr. S.W., Atlanta, GA 30314, (404) 215-2636, FAX: (404) 215-2749.

A syllabus is not a contract between instructor and student, but rather a guide to course procedures. The instructor reserves the right to amend the syllabus when conflicts, emergencies or circumstances dictate. Students will be duly notified.

Thought for the semester: No Pain, No Gain