Syllabus

830:305:H1 Cognition Fall 2016

Instructor: Arnold Glass, Office hours are Tuesday and Thursday at 6:30 PM in 121 Psychology Building, Busch. However, one should always make an appointment by email in advance. Email: aglass@rutgers.edu

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Time and Location: Monday 8:40 - 11:40 AM ARC 205

Book: Cognition: A Neuroscience Approach by Arnold Glass, published by Cambridge University Press February 2016. Available from the Barnes and Noble Rutgers bookstore and, of course, online.

Course Description: The theme of this course is functional maps of the brain. Teams of 2 – 4 students will work on a semester – long project to illustrate some functional neural system, e.g. visual system, auditory system, language system, etc. This course will be of especial interest to anyone with artistic ability who likes to draw. This will be an opportunity to use your ability in the service of cutting edge science.

Purpose: Over the past quarter century, a mode of research has become dominant in the cognitive and neural sciences. Intensive effort is devoted to investigating a specific task. Consequently, more and more has been learned about less and less. There is a great deal of information but very little knowledge about the cognitive – neural interface or the social – cognitive interface. In this course we will take a step back and review the evidence for the functional cognitive systems of the brain that control action, vision, learning, language, and reasoning. We will diagram these systems and draw maps of the neural pathways that embody them. This will involve original effort because most of these systems have not been mapped in detail or described functionally, except in the vaguest terms.

Assignments: A list of functional brain systems is on the Resources page. We will review these systems in class on **September 19**. Each student will have to select one system and draw a well-documented schematic and neural map of it. Students must select a system to map by **September 26**. Students are encouraged to work in teams of two or three rather than individually on a system.

On **October 10** each team will make a presentation about what they learned about their system and what resources they have discovered that would be useful to the rest of the class.

On **November 14** in class each team will present a well-documented functional schematic of their system, based on a literature review of the experimental research on the system. A written report is due on the same day continuing all of the references used in construction of the schematic in APA format. Finally, the report should include 1 - 3 schematics and 1 - 3 anatomical maps that were discovered by the research. These should include the best ones

discovered. The schematics will be critiqued by the class and minor changes may be suggested. The relationships among the different systems will be discussed.

On **November 28** in class each team will present a well-documented anatomical map of their functional system, based on a literature review of the experimental research on the system. A revised written report is due the same day. The maps will be critiqued by the class and minor changes may be suggested. The relationships among the different systems will be discussed.

On **December 12** in class each team will present the final anatomical map of their functional system, based on a literature review of the experimental research on the system. A revised written report is due the same day. The maps will be critiqued by the class and minor changes may be suggested. The relationships among the different systems will be discussed.

The schematic should be constructed with the tools available in **Word** and, if at all possible, the anatomical map should be constructed with tools in **Word**. All submissions, the report, the schematic, and the anatomical map, should be **Word documents**.

Class Participation using Top Hat System:

There will be an online quiz before every class and students will participate in class using their cell phones or laptops. If you are not enthusiastic about attending every class then this course is not for you.

We will be using the Top Hat (www.tophat.com) classroom response system in class. You will be able to submit answers to in-class questions using Apple or Android smartphones and tablets, laptops, or through text message.

You can visit the Top Hat Overview (https://success.tophat.com/s/article/Student-Top-Hat-Overview-and-Getting-Started-Guide) within the Top Hat Success Center which outlines how you will register for a Top Hat account, as well as providing a brief overview to get you up and running on the system.

An email invitation was sent to you by email, but if didn't receive this email, you can register by simply visiting the Top Hat course website for this course: https://app.tophat.com/e/996663
Note: our Course Join Code is 996663

Top Hat will require a paid subscription, and a full breakdown of all subscription options available can be found here: www.tophat.com/pricing.

Should you require assistance with Top Hat at any time, due to the fact that they require specific user information to troubleshoot these issues, please contact their Support Team directly by way of email (support@tophat.com), the in app support button, or by calling 1-888-663-5491.

Class Preparation: Two - five days before each class or exam, a quiz will be available at Tests & Quizzes.

In order to benefit from the class structure, you should perform the following assignments in the following order:

First, you should do the assigned reading.

Second, you should take the timed retrieval quiz. Do not click on it until you are ready to proceed with the entire quiz. **You will only be able to take the timed assessment once.** Hence, once you open it you must answer all of the questions and submit it for grading. Otherwise, you will not receive credit. You cannot begin it, close it, and come back and complete it later.

Each online quiz will be available from the end of one class until 8:40 AM before the next class. The quiz will not be available at any other time. If you skip a quiz you will not be able to take it later.

Third, you should take notice of the feedback for any questions you get wrong. You should reread the relevant material in the textbook.

Fourth, you should come to class, on time, with a working clicker and answer all the clicker questions.

The information you must learn from this course is encoded in about 120 4-question sets. All four questions in each set are about the same fact-statement. So knowing the answer to one question in the set implies knowing the answer to them all. Let us call four questions in the same set: Q1, Q2, Q3, and Q4. Q1 will appear on the online quiz before class. Q2 will appear in class and Q3 will appear on an hourly exam. Q4 will appear on the final. If you take all the quizzes and participate in all the classes, you should get 90% correct on the exams. If you get 90% correct on the exams then you will get an A in the course.

Students are strongly urged to first read the assignment and then take the quiz, taking notice of the correct answers for those questions gotten wrong. Every practice quiz question is similar or identical to a question that will appear in class and on an exam. Hence, there is no better way of preparing for class and the exams than by doing the reading and taking the practice quizzes.

Each student will receive a quiz grade for each third of the course. If the quiz grade is higher than the class participation grade then it will be averaged with the class participation grade. Otherwise, it will not count. Hence, a quiz grade can raise but cannot lower your class participation grade. There is no way to gain access to or make up a quiz that you miss.

Class Participation: The Top Hat system will be used for answering questions in class.

Rosh Hashonah: There will be no class Monday October 3.

Lecture Notes: The Power Point slides used in class are available on line. Just click on the appropriate links on the syllabus or on the Resource page. There may be slight differences in the slides I use in class because I am always updating and revising my notes.

Grades will be posted on the Sakai grade book. You have one week from the day of the exam to challenge the grade on the exam. You may do so by making an appointment to go over your exam in person. If you do not challenge your grade within the week then it will be final and you will have no further opportunity to see or go over your exam.

Exams: There will be 3 exams during the semester and a fourth final exam during the final exam period.

If you miss an exam and your excuse is accepted then your online/clicker score will be used as your exam grade. Make up exams are not given. Be warned that online/clicker scores are usually much lower than your likely exam score.

If you miss an exam and your excuse is not accepted then you will receive a zero for that exam.

If you are found to have a cell phone or any other communication or recording device, e.g., camera, during an exam then you will receive an F in the course.

If you are found to have in your possession any notes or other unauthorized materials during the exam then you will receive an F in the course.

Exams 1, 2, and 3 and the final will be administered on Sakai. So you must bring a laptop or phone with an internet connection to the exam.

The final exam will consist of clicker questions similar or identical to the questions on the three clicker exams.

The final exam will be: Dec 19, 2016: 8:00 AM - 11:00 AM

Attendance and Classroom Decorum: You should not arrive late or leave early.

Cell phones should be off. You should dress appropriately and **you should not put your feet on the seat in front of you.**

If you arrive before class begins then **do not** sit in the last two rows.

If you arrive after class begins or plan to leave early then please sit in the last two rows so that you do not disturb your classmates.

Grading: Final grades will be determined by the following point system: 90%-A, 80%-B, 70%-C. Plus grades will be determined by the distribution of scores. The various course activities will be weighted as follows: classroom questions: 5%, online quizzes 5%, unit exams 10%, final exam 20%, final report 60%.

You are responsible for knowing the material on this syllabus. If you email me or ask me a question that is answered on this syllabus then I will answer it, but I will also deduct a point from your final grade.

Syllabus:

Monday	Sept. 12	Ch. 1 Evolution of Action	Evolution of Learning
Monday	Sept. 12	Ch. 2 Evolution of Cognition	Instrumental & Habit Learning
Monday	Sept. 19	Ch. 2 Evolution of Cognition	Procedural & Declarative Learning
Monday	Sept. 19	Ch. 3 Motor Action	Action, Skill Learning
Monday	Sept. 26	Ch. 4 Mental Action	Attention 1: Looking & Listening, Attention 2: Task Performance
Monday	Sept. 26	Ch. 5 Serial Learning, Talent	Serial Learning, Talent
Monday	Oct. 3	No Class	
Monday	Oct. 3	No Class	
Monday	Oct. 10	Ch. 6 Vision	Visual Perception
Monday	Oct. 10	Ch. 6 Vision	Visual Recognition
Monday	Oct. 17	Presentations	**Exam 1**
Monday	Oct. 17	Presentations	**Exam 1**
Monday	Oct. 24	Ch. 7 Semantic Memory	Semantic Memory
Monday	Oct. 24	Ch. 7 Language	Language Processing
Monday	Oct. 31	Ch. 8 Infant & Language Learning	Infant Learning
Monday	Oct. 31	Ch. 9 Categorization	Language Learning,Causal Learning
Monday	Nov. 7	Ch. 10 Learning	Rehearsal
Monday	Nov. 7	Ch. 10 Mnemonics	Imagery,Amnesia
Monday	Nov. 14	Presentations	**Exam 2**
Monday	Nov. 14	Presentations	**Exam 2**
Monday	Nov. 21	Ch. 11 Recognition	Recognition Judgment
Monday	Nov. 21	Ch. 12 Recall	Recall
Monday	Nov. 28	Ch. 13 Autobiographical Mem.	Autobiographical Memory
Monday	Nov. 28	Ch. 14 Reasoning	Reasoning 1,Reasoning 2
Monday	Dec. 5	Ch. 15 Problem Solving	Problem Solving
Monday	Dec. 5	Ch. 15 Intelligence	Intelligence
Monday	Dec. 12	Presentations	**Exam 3**
Monday	Dec. 12	Presentations	**Exam 3**

Monday   Dec. 19   **Final Exam**