Honors College 211 — Introduction to Experimental Psychology I Fall 2004

Lecture Location. 303 Chapman; Monday / Wednesday, 12:00-1:20. Discussion Location. 303 Chapman Hall. Friday, 12:00-1:20.

Instructor:

Dr. Michael Anderson, 345 Straub, 346-4796. mcanders@darkwing.uoregon.edu Office Hours: Monday/ Wednesday 1:30-2:30, or by appointment.

Discussion Instructor:

Michael Myers, Rm 335 Straub Hall, (541)-346-2921 mmyers4@darkwing.uoregon.edu Office Hours: Tuesday, Thursdays 2-3:00pm

Text: Gleitman, Fridlund, & Reisberg, 6th edition. <u>Psychology</u>. Norton.

Goal: The purpose of this course is to introduce you to the basic methods, theories, and findings of experimental psychology. Topics include how psychologists do research, how the nervous system is organized, how we sense and represent the world, how behavior is changed by the environment, how we remember, and the nature of thought.

Class Meetings: The lectures will be related to the readings, but are primarily intended to supplement, not to explain, the text.

Discussion (Lab) Sessions: The lab sections will be devoted to a variety of activities intended to complement the information covered in lecture and by the textbook. Sessions will consist of demonstrations of important psychological principles, discussion of relevant empirical literature, and activities designed to assist students in completing the course requirements. The lab section offers students the opportunity to ask questions about homework assignments and topics covered in lecture. Please plan to attend the lab regularly and bring any questions you have about the course material.

Exams: The exams will be primarily short answer and essay in format (although there may be some multiple choice), and will cover readings, lectures, and lab sections. The final exam will be cumulative. Make-up exams will only be granted in cases of serious illness, documented by a letter from a licensed medical practitioner, and will only be granted for midterms, not finals. Students wishing to take a make-up midterm must get prior approval from the instructor. *No exam can be taken earlier than the time listed on this syllabus*.

Paper and Poster: You will be writing one 5-6 page reaction paper and collaborating on one poster. The first draft of the paper will be due in the first half of the term, just before the midterm. The second and final draft will be due shortly after the midterm. You will base the paper on at least one article (you may read others if you wish) that you will

choose from a set that will be made available to you. The main purpose of this assignment is to give you an opportunity to think in depth about at least one issue that interests you that is relevant to the course material. For this paper, you will summarize succinctly the main ideas, methods, findings, and/or arguments of the seed article (no more than 1-2 pages), and then (a) critically evaluate those ideas/arguments, (b) relate the ideas/findings to real life issues or applications, and (c) discuss ideas for future projects/research that you think might be scientifically or practically valuable. The poster will be described in more detail during class.

Experimental Subject Option: If you wish to earn extra credit, you may participate in Experiments in the Psychology Department Human Subjects pool. In doing this, you contribute to scientific knowledge while learning about how psychological research is done. You may participate in a maximum of 4 experiments (4 hours). Each hour of participation will be awarded 1.5 points on your final grade. If you are on the borderline between two grades, doing this extra credit could push you to the next grade up.

Grading: There will be 250 points possible, distributed as follows (discussion includes paper and poster, and participation):

Discussion (lab)	125
Midterm Exam 1	35
Midterm Exam 2	35
Final Exam	60

Tests and Papers will be graded on an absolute scale. As, Bs, Cs, and Ds will be assigned for assignments earning more than 90%, 80%, 70%, or 60% of the possible points, respectively.

Students with Disabilities: If you have a documented disability and anticipate needing accommodations in this course, please make arrangements to meet with the instructor soon. Also please request that the Counselor for Students with Disabilities send a letter verifying your disability. [Counselor for Students with Disabilities: Molly Sirois, 346-1073, TTY 346-1083, sirois@uoregon.edu]

Date	Lecture Topic	Reading Assignment	Week #
Introduction a	and Overview		
Sept 27	Introduction	Ch. 1	1
Sept 29	History of ideas in Psychology	Ch. 1	1
Oct 1	Special Friday Class: Research Methods	Ch. 1. Appendix I	1
Oct 4	Architecture of the Nervous System	Ch. 2	2
Oct 6	Discussion Section Swap	Ch. 2	2
Oct 11	Building Blocks of the Nervous System	Ch. 2	3
Oct 13	Neurons & the Neural Basis of Learning	Ch. 2	3
Oct 18	Exam 1	None	4
Oct 20	Neurons and Brain Demo	Ch. 2	4
Oct 25	Learning I: Classical Conditioning	Ch. 4	5
Oct 27	Learning II: Operant Conditioning	Ch. 4	5
Nov 1	Sensory Systems	Ch. 5	6
Nov 3	Guest Lecture: Vision as a Model Sensory Sytem	Ch. 5	6
Nov 8	Exam 2	None	7
Nov 10	Guest Lecture: Deficits in Visual Perception	Ch. 6	7
Nov 15	Perception II: Form Perception	Ch. 6	8
Nov 17	Attention	Ch. 6	8
Nov 22	Memory I	Ch. 7	9
Nov 24	Memory I: Structure of Memory	Ch. 7	9
Nov 29	Memory II: Amnesia	Ch. 7	10
Dec 1	Knowledge & Thought	Ch. 8	10

Course Outline

December 9 (Thursday at 10:15 am): Final Examination:

Paper Assignment for Psychology 211 Introduction to Experimental Psychology Fall, 2004

You will be writing a 5-6 page paper on a topic relevant to the course material. You will be basing your paper on one of ten "seed articles" that span a wide range of special issues in experimental psychology. These articles are available to peruse in a place to be announced by your teaching assistant. The following hand out describes the objectives of this assignment, and the particular stages through which it will progress.

<u>Critical Analysis</u>. The first objective of this assignment is to provide an opportunity for you to think in depth about a topic about which you would like to know more. Towards this end, you will be reading both a seed article and supplementary articles that you will look up on your own. You will be expected to both absorb and critically analyze the papers you select--i.e., to decide whether you believe the results, arguments, or theories, and, if not, what you think is a better explanation / proposal. This does not mean that you <u>must</u> find fault with the material you are reading--you may find yourself in agreement with the methods and arguments. I just want you to be a careful consumer of ideas, and to apply your new knowledge of experimental methodology.

In addition to critically analyzing the ideas and arguments in your papers, you should devote part of your energy to thinking about the gaps in the research. What questions remain unaddressed that would be interesting to know about? This is an opportunity to use your imagination and take the research in novel directions. These ideas could be of many varieties, such as (a) ideas about new scientific research investigating the processes / theories of interest, or (b) ideas about how to apply the research in novel ways to practical issues, or to other theoretical topics not considered by the researchers.

Literature Search. The seed article will provide a launchpoint for your explorations, giving you grounding in some of the most current research on the topic. The seed articles also provide references that you may use to "dive into" the literature, and learn as much as you can. You will be expected to read at least a couple of other papers that provide more detail about the methodology, arguments, and background than can be found in the seed article. (most seed articles were drawn from a review journal that doesn't provide specific methodological detail). By going and looking up these related papers, you will not only gain experience with the process of conducting a literature search, but also gain experience in reading professional journal articles by scientists in the topic you have chosen to investigate.

There is some flexibility in how you can approach your paper. One common approach is to focus your paper on the specific arguments / claims that are made in the seed article. If you choose this approach, your literature search strategy would be to find other empirical (experimental) and /or theoretical articles that go into much greater depth about the methodological and procedural details of the experiments and the data, to enrich your understanding of claims and the data they are based on. The focus of your paper then would be to critically analyze the claims of the author in their seed article, based not only on that article, but on the fuller understanding of the issue that you acquire through your extra reading. These additional readings would also be highlighted in your paper to help build the case for your analysis. Note: If you take this approach, it is not sufficient to write a critical analysis that is based solely on the seed article—it MUST take into account additional papers that flesh things out more.

The second approach is to use your seed article simply as a means of branching out and finding a related topic that interests you. For instance, if you chose the article by Posner on attention, you might decide that you wanted to focus on a more specific topic related to attention—for instance, attention deficit disorder—even though that is not the main topic of the Posner article. If you want to take this approach, you will need some guidance in coming up with articles to focus on (the TA or Dr. Anderson will be glad to help). You will also need to discuss your idea with the TA and get approval. In this approach, you will be writing a paper that does not focus primarily on the seed article, but on these related articles. However, you must also integrate some discussion of the seed article into your paper as well.

<u>Writing the Paper</u>. Based on the background acquired through your literature search and the seed article, you will write a 5-6 page paper in which you will (a) introduce the topic and describe why it is interesting and important to study, (b) describe, in concise and accurate terms, people's approach to research on that topic (or at least the research on which you will be focusing), its assumptions, and typical arguments and results, (c) present theories, where relevant, and describe how they relate to the data, (d) critically analyze the approach / ideas / arguments / theories, and (e) present any new ideas/ questions you have. Note: you will undoubtedly learn far more in your literature search than you will be able to fit in your paper. You shouldn't try to say everything that you learned, or to critique everything that you learned. You must determine what will make a focused, informative, and analytic paper, based on all that you have read.

<u>Peer Review</u>. When you have written your paper, you will submit 4 copies to your TA. Three of these will be distributed to some of your peers, who will then read and critique your paper. These critiques will be approximately 1-2 pages long, and will (a) evaluate the merit and persuasiveness of your arguments, (b) give you constructive feedback on the clarity of the ideas you present, and about your writing, and (c) give you general comments about the work, including any ideas / observations the reviewer may have had. You will also be responsible for doing 3 critiques (naturally) of your classmates' papers. When completed, these critiques will be delivered back to you (and yours to the other authors), and you will use them as the basis for your revision of the paper, along with the editor's comments (i.e., your TA). In your revision, you may wish to add new material as well, if you discover additional work or ideas that you would like to include. However, do not stray too far from the original--don't completely redo the paper, unless the editor recommends it.

This process has several objectives. First, you will experience what the review process is like. You will not only experience what it is like to get critical feedback from your peers, but also what it is like to be a critical reviewer yourself. Second, the detailed

feedback will give you an opportunity to rewrite your paper, and create a truly excellent writing sample about a topic you find very interesting.

Grading

Initial Draft--graded by TA--20% of the grade Critiques that you do of <u>others</u>' papers --- graded by TA--20% of grade Final Draft--graded by Dr. Anderson---60% of the grade

Grading of the Paper -- papers will be graded, based on:

- 1. The care taken to accurately describe ideas / theories / arguments
- 2. The amount of original thought in the paper, including successful application of critical thinking skills and discussion of interesting and creative ideas
- 3. The quality of the writing.
- 4. The amount of work that you did. If you did lots of reading, and your paper shows that you went well beyond the seed article in your research, you may be rewarded for this effort. However, don't go overboard. Keep your paper focused, and allow yourself space to present your own thoughts and ideas--5-6 pages is not a lot of space.

Grading of the Critique--critiques will be graded, based on:

- 1. The number and usefulness of comments about the ideas / arguments in the critiqued paper.
- 2. The number and usefulness of comments about the writing.
- 3. The number and usefulness of new ideas / creative input provided by the reviewer.

The critiques should be critical, yet very constructive. Avoid insulting or hurtful remarks. Comments should always have the aim of helping the author to better their ideas and paper. Be critical, but professional. All reviews should be anonymous.

Paper format:

- 1. The paper should be 1.5 spaced (12 point), and no longer than 5-6 pages.
- 2. The paper should include a title page, and references to all of the work that you cite. These are not included in the page limit.
- 3. The citations should follow APA format (see references that are included in the seed article for an example).
- 4. Any figures / tables /diagrams you would like to include should be tacked on at the end, and reference should be made to them in the body of the text.

Seed Articles For Psychology 211

1. Baillargeon, R. (1994). How do infants learn about the physical world? Current Directions in Psychological Science. 3, 133-140.

Infants can't talk. But can they think? How do they think? What are their beliefs about the world, and how are they learned? Find out about how these questions can be answered by exceptionally clever developmental psychology methods--infants are far smarter than psychologists once thought!

2. Graziano, M.S.A., & Gross, C.G. (1994). Mapping space with neurons. Current Directions in Psychological Science. 3, 164-167.

You are Sammy Parker and you are running deep to catch a long pass by Harrington during the Fiesta Bowl. Harrington throws a nearly perfect pass, though perhaps a little long, and you speed up and adjust your body and arm to just the right location in space to have the ball plop gently into your hands. How did you do that? Find out about the "visual map" in the brain, and how it helps you coordinate yourself in a spatial world.

3. Posner, M.I. (1992). Attention as a cognitive and neural system. Current Directions in Psychological Science. 1, 11-14.

Pay attention! What does that mean? What is attention, and how does it occur in the human brain? An article by our very own Michael Posner, of the University of Oregon Psychology Department.

4. Behrman, M. (2000). The mind's eye mapped onto the brain's matter. Current Directions in Psychological Science, 9, 50-54

Close your eyes and try to picture the face of a friend or the layout of your living room. Most people say they can imagine these types of familiar things with little difficulty, but what is the nature of these mental images? Are they anything like the images we actually see with our eyes? Some research suggests that mental imagery relies on the same brain areas involved in normal vision. Read about how mental imagery might have more in common with vision than you think.

 Rovee-Collier, C. (1999). The development of infant memory. Current Directions in Psychological Science. 8, 80-85.

You can't remember anything before the age of 4 right? Most scientists have argued that this is because the infant's brain has not matured enough to store truly long-term memories. Find out why this is wrong, and how this investigator is mapping out the memory abilities of very young babies.

6. Various authors: Special issue of Current Directions in Psychological Science on "Evolving perspectives on lateralization of function"

Interested in how the two sides of the brain differ? Here is a whole issue of a journal devoted to different perspectives on "lateralization of function" in the human brain. Pick one article (or more if you like).

7. Whalen, P.J. (1998). Fear, vigilance, and ambiguity: Initial neuroimaging studies of the human amygdala. Current Directions in Psychological Science. 7, 177-187.

Interested in emotion? Find out about a particularly "hot" area of the brain that is intimately involved in how we learn to fear the things that scare us!

8. Blake, R. (1997). What can be "perceived" in the absence of visual awareness? Current Directions in Psychological Science. 6, 157-162.

How can we study how consciousness is manifested in the human brain? Here is a neat approach that is widely used today--find out about the brain basis of consciousness!

9. Kolb, B., Gibb, R., & Robinson, T.E. (2003). Brain plasticity and behavior. Current directions in psychological science. 12, 1-4.

Only two decades again, neuroscientist believe that the brain, once developed, was relatively "hard wired" and was not subject to change. In the last two decades, a great deal of work has shown that the brain, even in adulthood, can reorganize as a function of experience. Many things can change brain organization, including drugs, diet, disease, and stress. Check out how your brain might change and what the consequences are!

10. Dohanich, G. (2003). Ovarian steroids and cognitive function. Current Directions in Psychological Science. 12 57-61

Can variations in hormones, such as estrogen and progesterone influence cognitive functions, such as learning and memory?