

# Human Learning and Performance Fall 2006

Course: EXP 3461C

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Office: Bldg 51: 3441, Hrs: Wed: 3:30 - 5:30, Tue & Thr: 2:00 - 3:30

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## **Prerequisite for this Course:**

Having passed both *Research Methods* and *Research Methods Lab*

Course Description: This course provides hands-on experience in conducting experiments in human learning and performance. The theoretical focus is on basic mechanisms of human learning from infancy to adulthood, with special emphasis on motor performance. The practical focus is on design of experiments, analysis of data, presentation of graphs, and on public as well as written presentation of research results. Topics for in-class research projects include computerized experiments on motor skills in aiming at targets, interception of moving targets, and various forms of visual guidance of motor skills.

## I. Course Material:

- 1) Various articles and chapters from different books (provided free by the instructor)
- 2) *APA style manual, 5<sup>th</sup> Edition* (recommended)
- 3) Lectures and handouts by instructor (plus material placed on Blackboard)
- 4) Class presentations by students (see below).
- 5) Your own research data obtained in the lab and at home

## II. Purpose of the course:

The main purpose is to acquaint you with basic methodology used in research on human learning and performance. Part of this methodology is analysis of actual data and graphical presentation of such data. The main source of this learning will be direct interaction with the material on computers in the lab. You will be the subject in the experiments, and you will be analyzing your own data as well as the data from the other subjects. You will also learn various methods of presenting results from experiments.

A second purpose is for you to learn about basic principles of human learning and performance from selected texts and class presentations. We will read various texts from different sources about basic learning principles and application of these principles in both everyday and clinical domains. The main emphasis will be on an experimental, rather than a theoretical, approach to learning research.

A third purpose is for you to learn basic hands-on skills regarding computer use in psychology. This class is a 4-hr credit experimental psychology course. Therefore, you should expect to spend quite a bit of time interacting with the computers both in the laboratory and outside of class. By the end of the semester, you will have learned to use Excel for data analysis and graph presentation, PowerPoint for overhead presentations, and various other computer uses for researchers in psychology. You will also have become more proficient in literature search on the internet and using various databases.

## III. Teaching methods:

Assigned Readings: Selected articles and chapters from different books will be used as our basic reading material. No textbook will be used in the course. The texts have been selected such that the student should be able to gain an understanding of the text from an independent reading. The instructor will first go through main points of each assigned reading, and after that, the class as a whole should join in a discussion of the text. Thus, the instructor expects that you have read the texts prior to their coverage in class. A 4-hr credit experimental course is a bit different from regular lecture classes in this regard. In each class period the instructor will highlight certain issues from the assigned reading, present additional material, and lead discussions with the class.

To supplement the information from the texts, students will give presentations in class on assigned literature, on group projects, and on the contents of selected WebPages related to the topic of the Course.

An important source of information and learning will be your direct interaction with the computer assignments in the laboratory. A series of experiments have been designed specifically for this class. You will work on a project on your own with your computer in the class, and we will analyze the results collectively. You will learn a variety of methods and techniques of analyzing and presenting material from experiments. For example, we will cover preparation of PowerPoint presentations and preparation of text documents where images, graphs, and words are integrated.

The course will not place any particular emphasis on inferential statistics. Instead, we will focus on descriptive statistics (drawing graphs to analyze data as opposed to computing *t*-tests and Analyses of Variance).

Relevant class material will be placed on Blackboard such as the instructor's PowerPoint presentations, student class presentations and additional information.

#### IV. Planned Course Activities:

1) **Home Experiments:** You will be conducting two experiments at home, which extend through most of the semester. You should spend 5 – 10 minutes on it each day. Hopefully it will be a fun thing to do each day. The first “warm-up” home-experiment is a very simple two-ball juggling exercise that lasts only about 10 days. The material from this experiment forms the basis for Report 1 (see below). The second experiment lasts for most of the remainder of the semester. Essentially, you will be improving or creating a self-selected motor skill, and you will take data so that you can analyze how you are progressing. The material from this second experiment is the basis for Report 4 (see below). (An added benefit of the second experiment is that with some effort on your part, you may generate a new or better skill that will stay with you for the rest of your life.)

2) **Class Experiments:** We will conduct a series of experiments using the computers in the lab. The topics for the experiments serve to introduce you to basic research issues in human learning and performance. Each experiment is designed so that you can complete it in one class period. The material from these experiments forms the basis for Reports 2 and 3 (see below).

3) **Reports:** You will prepare four reports. *Report 1* is a very informal and brief 2-4 page description of the very first “warm-up experiment” on simple juggling that you perform at home; there is no requirement regarding report format other than it has to be typed. *Reports 2 and 3* are reports about experiments we conduct in class; these reports must be prepared according to the guidelines of the APA style manual, 5<sup>th</sup> edition. *Report 2* will cover experiments that we conduct in class on reaction times and duration estimates. *Report 3* will cover experiments that we conduct in class on aiming and movement accuracy. Take note of the fact that you will be preparing most if not all of the graphical material for the reports while you are in class. You will be conducting some literature search outside of class, and you will be writing the reports outside of class. However, given available time, some of the literature search and report preparation can be done during class time at the discretion of the instructor. Some minimal requirements regarding the APA style will be covered in class as well. The length of each report is expected to be about 5-8 typed text pages (not including front page, abstract page, references, figure captions, tables, and figures). *Report 4* is about your extended home project on skill improvement. This report should also have an extensive literature coverage related to skill learning in the area that you select for study. The expected length is about 10 typed text pages (not including front page, abstract page, references, figure captions, tables, and figures). *Report 4* is in “free style”; APA style is not required.

For all four reports: If you turn in your report after the class period on the day it is due, 5 points will be subtracted for each calendar day it is late, with the first day beginning when class ends on the due date. Thus, if you turn in your report on the same day that it is due, but after class is over, 5 points will be subtracted from your credit; if you hand in the report on the day after the due date, 10 points are subtracted, etc.

4) **Research Summaries:** Each student should prepare **four** one-page summaries of actual research articles. The articles are available in journals in the UNF library. You select them from a list supplied by the instructor. This task serves to acquaint you with locating and reading experimental literature. Each summary earns you 5 points. (APA style is not required).

5) **Class presentation:** Based on outside reading of original research reports on some aspect of human

learning, each student will give one class presentation for the class for a 10-minute period. You must write a 1-page summary of your presentation (APA-style not required) so that the other students can have some material about your presentation (class presentation material appears on exams). The instructor will provide the topics for the class presentations early in the semester. Class presentations are distributed over the semester such that each student has sufficient time to prepare for the presentation. The presentation should be prepared using PowerPoint (the basic method of generating a PowerPoint preparation will be covered in class). The presenter is expected to be able to answer questions about the material that he/she presents. Class presentations are graded by the whole class and by the instructor. The presenter must send the PowerPoint file and the summary page by email to the instructor for approval at least one day prior to the presentation date.

**6) Group Presentation:** Groups of two or three students will select a topic to research and explore outside of class. The idea is that the group examines various sources of information for material on the given topic and then late in the semester presents for class the outcome of the research. Each presentation should last about 20 minutes and should be prepared using PowerPoint. The group will not conduct any actual experiments but will search literature relevant to some topic about human learning. Many of the topics for the group presentations are in applied psychology. The group should prepare a 2-3 page summary (APA style is not required) of the main points of the presentations. This summary is to be handed out to the other students on the day of the presentation (as for class presentations); material from group presentations will appear on the last exam. Group presentations are graded by the whole class and by the instructor. Each student in the group must actively participate in the presentation and the following discussion. Each student in a group will receive the same grade. However, the instructor will decide if a given student is not eligible for the group grade in case he/she is not present or does not show solid evidence of knowing the material the group presents.

**7) Webpage Description:** Each student will be given an assignment to present to class a given webpage and describe in words what is on the page and what some of the links contain. The student will basically walk the class through the webpage as part of the presentation. No handout or PowerPoint presentation is necessary. Each webpage will be about material relevant for the topic of human learning and performance. Each presentation should only last about 5 minutes. A list of topics will be given early in the semester. Webpage presentations are distributed over the semester such that each student has sufficient time to prepare for the presentation.

**8) Homework:** During the semester there will be some homework and in-class assignments. The material is primarily library assignments, abstract writing, Table formatting, data analysis, drawing of graphs, and some computer exercises, etc. Due dates will be announced in class. The homework is not graded. However, up to 10 points will be subtracted from your class total if the instructor decides that you are not participating in the homework assignments.

**9) Exams:** Three exams consist of multiple-choice questions, short-answer questions, and questions related to graphical presentation of data. Exams will cover selected material from the assigned readings, lecture material, class presentations, group presentations, homework, lab experiments, etc. **It is a good idea to bring a calculator and a ruler to the exams.**

V. Grading. Final grade is based on the following points:

1: Report 1	20
2: Report 2	30
3: Report 3	40
4: Report 4	50
5: Exam I	50
6: Exam II	50
7: Exam III	50
8: Class presentation	20
9: Group Presentation	30
10: Four Summaries (5 points each)	20
11: Webpage description	10

**Total Points: 370**

### **Extra Credit:**

A total of 19 points can be earned.

For Reports 2 and 3 you can earn 5 points for each report if you show a *completely finished* report personally to the instructor at least one class period before it is due. You will get quick verbal feedback on the report, and you can then fix possible mistakes before turning it in on the due date. In addition, for Reports 2, 3, and 4, if they are handed in **personally at the beginning of the class period on the due date** and if you stay for the remainder of the class period, you will receive 3 points for each report. Reports cannot be submitted by email to the instructor for extra credit.

**NOTE:** All Reports (1, 2, 3, and 4) must be handed to the instructor personally and may not be submitted by email.

### **Final Grade:**

Excluding the extra credit, a total of 370 points can be earned. The final grade is calculated based on the following criteria:

- A: 370 - 330
- B: 329 - 290
- C: 289 - 250
- D: 249 - 200
- F: 199 - 0

Notice that this point system allows for each and every student to earn an A as a final grade.

**An additional requirement for earning a final grade of C or higher, is that you must hand in all Four Reports.**

### **Attendance:**

There is a formal laboratory attendance requirement. If you arrive late, leave too early, go in and out of the lab during class, or fail to come at all, it makes the research task more difficult for the class as a whole, and the research projects may suffer from such problems. The instructor therefore takes attendance. Points will be subtracted from the final grade for students who consistently come late, leave too early, or repeatedly fail to appear in class for the lab segments, which will be announced ahead of time. A maximum of 30 points can be subtracted. Legitimate reasons for occasionally failing to appear in the lab, such as accidents, arrests, disease, etc., that can be documented from authoritative sources, will not result in point deductions.

**Notice:** No paperwork such as Research Summaries, Reports, or homework will be accepted when submitted to the instructor via email. PowerPoint presentation files and the one page summary of Class Presentations and Group Presentations are the exception to this rule. They must be sent by email to the instructor for approval at least one day prior to the date of presentation, as indicated above under Class and Group Presentations. The instructor will then copy the summary for distribution in class.

**Notice:** The printer in the computer lab is **not** to be used unless the instructor asks you to print something. Thus, you cannot use this printer to print out your reports, summaries, or unrelated out-of-class assignments.

**Notice:** Any form of *Plagiarism* (using other people's material as if it were yours) in reports or cheating during exams will result a final grade of F and a formal letter submitted to the Dean. Plagiarism includes copying text from WebPages, articles you find in the library or on the internet, books, magazines, and newspapers, etc. and inserting such copied text into your report. The reports bear your name as the author, and the reader therefore expects that you have written all of it. Short quotations (a line or two) of already printed text is allowed for occasional use (one, two or three times in one report), and must be used according to the guidelines in the APA manual (the author, the year of publication, and the page number must be stated near the quotation, and the reference to the publication the quotation comes from must appear in the reference list in your report)

VI. Course Plan: Human Learning and Performance, 2006 FALL

AUGUST

29	Tue	Syllabus and Introduction	
31	Thr	Discussion of Library Use Juggling Experiment Start	Assignment Handout A

SEPTEMBER

5	Tue	Discuss Library Assignment, Computer Use, Juggling Data Analysis <b>Library Assignment Due</b>	
7	Thr	Learning I, Law of Effect <b>Research Summary 1 Due</b>	Reading I
12	Tue	Learning II, Operant Conditioning <b>Report 1 Due</b>	Reading II
14	Thr	Learning Continued Experiment 1, Reaction Time <b>Research Summary 2 Due</b>	Handout B
19	Tue	Data Analysis, Graphs, Word Processing Report Preparation, APA style	APA Manual
21	Thr	Experiment 2, Time measurement Report Preparation <b>Research Summary 3 Due</b>	Handout C
26	Tue	Learning Continued	Reading III
28	Thr	Learning Continued <b>Report 2 Due</b>	

OCTOBER

3	Tue	<b>Exam 1</b>	
5	Thr	Behavior Modification <b>Research Summary 4 Due</b>	Reading IV
10	Tue	Behavior Modification	
12	Thr	Stimulus Control	Reading V
17	Tue	Stimulus Control	

19	Thr	Stimulus Control	Reading VI
24	Tue	<b>Exam 2</b>	
26	Thr	Motor Learning	Reading VII
31	Tue	Motor Learning Experiment 3, Aiming	Handout D

NOVEMBER

2	Thr	Motor Learning Analysis of data from Experiment 3	
7	Tue	Motor Learning Experiment 4	
9	Thr	Analysis of data from Experiment 4	
14	Tue	Data Analysis, Preparation for Report 3	
16	Thr	Motor Learning	
21	Tue	Learning in Rehabilitation Settings <b>Report 3 Due</b>	Reading VIII
23	Thr	<i>Thanksgiving Holiday</i>	
28	Tue	<b>Group Presentations</b>	
30	Thr	<b>Group Presentations</b>	

DECEMBER

5	Tue	Learning in Educational Settings <b>Report 4 Due</b>	Reading IX
7	Thr	<b>Exam 3</b>	