

**Class Meetings**

TT	9am - 11am	Biology-Psychology 1124	
Tu	4:30pm - 6:00pm	Biology-Psychology 1234	Discussion

**Instructors**

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**WWW:** <http://www.bsos.umd.edu/psyc/ogrady/psyc601.htm>

**Blackboard:** <http://elms.umd.edu>

**Course Description:**

This course provides a general introduction to and overview of the fundamental theoretical principles of inferential statistics. It is intended to introduce you to the basic concepts of univariate least-squares parameter estimation and tests of significance. Specifically, we will examine elementary probability theory, descriptive statistics, point and interval estimation, the logic of hypothesis testing, the  $t$  and  $F$  tests, simple correlation and regression, and analysis of variance. It is assumed that you have had at least one undergraduate statistics course, and/or that you are familiar with the elementary concepts of probability, and the basic terminology of statistics.

## **Course Objectives:**

The objectives of this course are twofold. The first purpose is to familiarize you with the basic concepts and principles that underlie the use of inferential statistics in the behavioral sciences. The second purpose is to introduce you to statistical analysis on the computer.

## **Text**

Hays, W. (1994). *Statistics* (Fifth Edition). Wadsworth|Thomson Learning|Cengage Learning. ISBN 0-03-074467-9

## **Class Materials**

Outlines of each class lecture can be found in Acrobat Reader format on the class webpages.

The lectures that I deliver in this class and course materials I create and distribute, including overheads, tests, outlines, and similar materials, are protected by federal copyright law as my original works. My lectures are recorded or delivered from written notes in order to ensure copyright protection. You are permitted to take notes of lectures and to use course materials for your educational benefit in this course. Audio-recordings of my lectures will be available on the class Blackboard website, and are for your own personal use in this course. They may not otherwise be used without my prior written consent. You are not authorized to reproduce or distribute notes of lectures or my course materials or make any commercial use of them without my express written consent. Individuals who sell or distribute copies or modified copies of course materials or assist another person or entity in selling or distributing such materials may be considered in violation of the University Code of Student Conduct, Part 9(k).

## **Computer Usage**

You are each expected to have access to a computer system running the *SAS System*, version 9.2 or above. All homework assignments will utilize SAS to conduct various analyses. In addition to the homework assignments, I strongly encourage you to experiment with various data sets, either those I give you for assignment, those in your textbooks, and/or others of your own you might have.

I do not expect you to know how to program as a prerequisite for this course. Some time during weekly Discussion sections will be allotted to SAS programming. However, if you aren't familiar with canned statistical packages, please set aside some time early in the semester to introduce yourself to SAS.

A license for SAS is available for purchase for \$100 from the College of Behavioral and Social Sciences Office of Academic Computing Services:  
<http://www.oacs.umd.edu/software/SASRequest.asp>

## **Assignments**

For those of you taking this course for credit, there will be periodic assignments. These assignments will focus primarily on what we have recently discussed or are currently discussing in class, although considerable residual knowledge from prior weeks will be necessary. The assignments will involve both the solution of problems with the computer, hand computations, and short essay answers. Four assignments will be graded, while the remaining assignments will be ungraded.

### *Assignment Policies:*

- You may seek any and all help from others about how to execute Windows\OS commands.
- All homework will be graded by the class TA.
- If you have questions, please consult your class TAs, or your instructor.

### *Ungraded Assignments:*

- You may collaborate with other individuals, both in and outside the class, in completing any and all ungraded assignments. You must turn in your own work product.
- A late assignment will result in the reduction of one letter grade in a graded assignment.

### *Graded Assignments:*

- *You are expected to complete all graded assignments without the benefit of any aid from anyone other than the instructor or class TAs.*
- A late assignment will be downgraded one letter grade.
- An assignment turned in after the next assignment is due will receive a 0.
- An assignment turned in after the last scheduled exam will receive a 0.

## Exams

- You will be given three exams during the semester. These exams will be open-book, two hours in length, and administered during a regular class period. Each exam will include all material covered since the beginning of the semester.

- There will be no final exam.

- The schedule for the first two exams given in the **Schedule of Assignments** below is approximate.

- If for any reason either of the first two exams cannot be administered during the scheduled class meeting, it will be administered at the next regularly scheduled class meeting. If the third exam cannot be administered at the final class meeting, it will be administered during the regularly scheduled exam period for the class.

- All exams will be graded by the class TA.

## Grading

Your grade in this course will be based on a weighted average of your homework assignments and the three exams. Homework will count 40% of your final grade; each exam will count 20% of your final grade. Final grades will be determined as follows:

Letter Grade	Weighted Average
A+	97% and above
A	93%-96%, inclusive
A-	90%-93%, inclusive
B+	87%-89%, inclusive
B	83%-86%, inclusive
B-	80%-83%, inclusive
C+	77%-79%, inclusive
C	73%-76%, inclusive
C-	70%-73%, inclusive
D+	67%-69%, inclusive
D	63%-66%, inclusive
D-	60%-63%, inclusive
F	59% and below

A grade of I (Incomplete) will only be given under extraordinary circumstances, in which the student has completed the majority of the coursework, and is prevented from completing the remainder of the scheduled work due to some unforeseen event, such as a major illness or injury.

## **Academic Integrity**

The University's policy regarding academic integrity is included here by reference to <http://www.studenthonorcouncil.umd.edu/code.html> and to <http://www.testudo.umd.edu/soc/dishonesty.html>. If you are unfamiliar with the University's policy regarding academic integrity, I urge you to visit both sites and familiarize yourself with this material, if you have not already done so.

## Schedule of Assignments

<u>Week of</u>	<u>Topic</u>	<u>Chapter</u>
Aug 30	Introduction	Preface
Sep 6	Very Elementary Probability Theory	1
Sep 13	"	1
Sep 20	Frequency and Probability Distributions	2,3
Sep 27	Central Tendency and Variability	4
Oct 4	Sampling Distributions and Point Estimation	5
Oct 11	Normal Distribution	6
Oct 18	Hypothesis Testing	7
Oct 25	Inferences about Means and Power	7,8
Nov 1	Chi-Square and $F$	9
Nov 8	Correlation	14
Nov 15	Simple Regression	14
Nov 22	The Analysis of Variance	10
Nov 29	"	
Dec 6	Comparisons Among Means	11

Exams: Tu, 2 October (tentative)  
Tu, 5 November (tentative)  
Th, 9 December

The following material is available at the class web pages:

Overheads	<a href="http://www.bsos.umd.edu/psyc/ogrady/over601.htm">http://www.bsos.umd.edu/psyc/ogrady/over601.htm</a>
Reading List	<a href="http://www.bsos.umd.edu/psyc/ogrady/read601.htm">http://www.bsos.umd.edu/psyc/ogrady/read601.htm</a>
SAS Examples	<a href="http://www.bsos.umd.edu/psyc/ogrady/ex601.htm">http://www.bsos.umd.edu/psyc/ogrady/ex601.htm</a>
SAS Primer	<a href="http://www.bsos.umd.edu/psyc/ogrady/prime601.htm">http://www.bsos.umd.edu/psyc/ogrady/prime601.htm</a>
SAS Macros	<a href="http://www.bsos.umd.edu/psyc/ogrady/macro601.htm">http://www.bsos.umd.edu/psyc/ogrady/macro601.htm</a>
Homework	<a href="http://www.bsos.umd.edu/psyc/ogrady/home601.htm">http://www.bsos.umd.edu/psyc/ogrady/home601.htm</a>
Answers	<a href="http://www.bsos.umd.edu/psyc/ogrady/ans601.htm">http://www.bsos.umd.edu/psyc/ogrady/ans601.htm</a>

All articles on the reading list are available on the class Blackboard site, in the Readings folder in Course Documents.