

INTRODUCTION TO BUSINESS STATISTICS

MS 204 FALL 2008

Section 02 6:05-9:20 PM TH 158 Rike Hall

I. PREREQUISITE: MATH 127

II. MS 204 Staff – Web Site: www.wright.edu/~joseph.coleman
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NAME	TITLE	OFFICE NUMBER	PHONE NUMBER	HOURS
Joseph W. Coleman	Professor	212Q Rike Hall	775-2648 775-2895 (ISOM Dept to leave message)	M/W/F 1:30-2:30 pm TH 5:00-6:00 pm OR BY APPT.
Zoya Harmon	Graduate Assistant	247 Rike Hall	775-3738 775-2895 (ISOM Dept. to leave message)	M-F 10:00–12:00 pm M 4:00– 6:00 pm .

III. TEXTS: Business Statistics: A First Course, Fourth Edition, Levine, Krehbiel and Berenson, Pearson Prentice Hall, 2006.

SOFTWARE: EXCEL 5.0 or Above. Software is available in the Dunbar Library.
PH STAT2 ©2006 Software comes with the Text or a copy is available in ISOM Department (271 Rike Hall).

OTHER COURSE MATERIAL: CALCULATOR: Students are expected to possess a calculator that computes the mean and standard deviation for sample and population data.

IV. COURSE INFORMATION:

A. Course Description

In MS 204 a number of basic concepts are developed. We begin with the basic framework for problem solving and go from description statistics to the application of statistical methods. These concepts are useful and powerful, in and of themselves, and become even more meaningful when they are integrated into the problem solving tools which are studied in MS 205. As an illustration, regression analysis (in MS 205) is a major tool for solving not only technical and scientific problems, but it is very useful in studying a variety of more businesslike problems, i.e. sales forecasting and predicting failures for preventive maintenance. Regression analysis incorporates and integrates all of the following MS concepts: population, sample, random variable, probability estimation, and probability theory.

B. Course Assumptions

This course has been designed with the following assumptions:

1. That you are our customer.
2. This is a college level course and requires the appropriate amount of work to be completed.
3. That a student taking MS 204 will need to spend two or more hours outside of class for each hour spent in class.
4. That students are mature adults who can accept the responsibility for completing their assignments and for the consequences of their actions when they do not.
5. That the problem sessions and the graduate assistants can be an excellent resource for you, but should not be considered as a substitute for class.

C. Course Objectives

The objectives of this course:

1. To provide a solid base for understanding the application of statistics to business situations.
2. To provide the student with the ability to use packaged computer programs to analyze data.
3. To provide the opportunity for each student to obtain a good grade, dependent on student effort.

D. Course Structure

The structure of this course is:

1. A clearly defined work load in terms of the material to read, the assignments required, and the dates they are due.
2. Periodic segments of lectures, homework, pop quizzes and tests covering separate segments of the course.
3. A comprehensive final exam.
4. The accessibility of an instructional team made up of instructor and graduate assistants instead of a single instructor.
5. There will be assigned seating. The seat number will be used on your homework assignments, quizzes, and tests.

V. GRADING SYSTEM:

- A. TESTS: There will be two tests and a comprehensive final given which may be comprised of True/False, multiple choice, essay, fill in blank, and calculation problems. Tests may contain questions from prior areas. You will need a calculator which cannot be shared. The lowest score of the two tests and the comprehensive final will be dropped. If you must miss a test for any reason, that will be your dropped test. Under most circumstances, graded tests, etc. will be returned to the students the following class period. Any questions concerning the grading of a problem should be directed to Dr. Coleman. (Practice tests are on the Web site and WEB-CT.)

FOR ALL TESTS:

1. All students are required to bring their Wright State ID with picture (or similar picture ID) to the Tests and the Final Exam. These will be inspected when you turn in your Tests.
2. Put your name and seat number in ink on all test sheets.
3. Round all calculations to two places to the right of the decimal.
4. Test etiquette:
 - a. No hats on test day
 - b. CHEATING

WRIGHT STATE UNIVERSITY DOES NOT TOLERATE ACADEMIC DISHONESTY. Quoting from page 66 of the WSU Student Handbook: "Academic dishonesty includes but is not limited to plagiarism or dishonest conduct during an examination (including tests or notes not authorized by the instructor or of a device prepared specifically for the purposes of cheating; communication with another person other than the instructor by any means; looking at another person's paper; violation of procedures prescribed to protect the integrity of an examination; or cooperation with another person in academic dishonesty)." Any student caught cheating on a quiz will receive a zero and will not be permitted to retake that quiz. Any student caught cheating on the final will receive an "F" for the course.

5. CRIB SHEETS

The policy of the Information Systems and Operations Management Department is to NOT allow the use of student prepared crib sheets in MS 204 and MS 205. However, a crib sheet with applicable formulas will be provided. A copy of the crib sheet is attached to this syllabus. It is your responsibility to know how and when to apply each formula.

- B. HOMEWORK:** The purpose of homework is to learn the methods of statistics thus preparing you for the quizzes. NOTE: The homework problems are a sample of the ways for applying and learning the methods covered. They are not offered as a complete treatment of the material. (An answer book and practice quizzes are on the Web site and WEB-CT for this course.) Just listing the answers from the answer book will receive **NO** credit. Remember, concepts and basic definitions are as important as "plug and chug" problems! Problem Sessions are provided to assist students in working homework problems and preparing for the quizzes. **WAITING TO BEGIN STUDYING UNTIL THE DAY BEFORE A TEST WILL PROBABLY BE TOO LATE!** Homework will be collected on test day and checked for completeness only. **No late homework will be accepted.** Certain problems are marked with an "*"; these problems are to be accomplished both by hand and by EXCEL. The results from both methods will be compared by writing the handwritten results next to their corresponding values on the EXCEL printout. NOTE ANY DIFFERENCES! Put your NAME and your SEAT NUMBER in the top margin on all EXCEL printouts. **Homework assignments will be considered incomplete without the handwritten comparisons, names and seat numbers on the Excel outputs.**
- C. POP QUIZZES:** Attendance is important in MS 204. Missing lectures may mean missing concepts. Although attendance will not be taken each class, pop quizzes will be periodically given in class. There will be no make-up for pop quizzes.
- D. COMPUTER ASSIGNMENT:** The computer assignment will be explained later in the quarter. The due date also appears in this syllabus. The computer assignments should

have your name, class, and SEAT NUMBER clearly indicated on the first page of your printout and will only be accepted on the appropriate date in class. Late assignments will NOT be accepted and a grade of zero will be given if the assignment is not handed in on the due date. Put your NAME and your SEAT NUMBER in the top margin on all EXCEL printouts and papers handed in, and use STAPLES to attach all papers.

NOTE: Tests, homework, and computer assignments that are not picked up in class on the day scheduled for return will be available for pick up in the tutor room (247 Rike Hall) for a period of 2 weeks where they are filed by your SEAT NUMBER in folders. However, it is recommended that you pick up your graded work etc. in class the day it is to be handed back.

- E. FINAL EXAM: The final exam will be comprehensive. The format of the exam will be the same as the tests.
- F. You are expected to hold onto all graded assignments etc. until you receive an official transcript of your grade.

GRADING PERCENTAGES:

GRADING STRUCTURE:

TESTS (Top 2 out of
Test 1, Test 2 & FINAL) 75%
COMPUTER ASSIGN. 10%
HOMEWORK 10%
POP QUIZZES 5%

90 - 100 = A
80 - 89 = B
70 - 79 = C
60 - 69 = D
0 - 59 = F

MS 204 Outline

AREA 1

TOPIC	TO READ	ASSIGNED PROBLEMS
A. Introduction and Data Collection	Chapter 1, A1.1, A1.2 & Chapter 7-Sections 4 & 5	1.2, 1.3, 1.4, 1.6, 1.12-1.17, 7.23, 7.25
B. Presenting Data in Tables and Charts	Chapter 2 (Sections 2.2, 2.3 & 2.6) A2.1	2.13, 2.14, 2.16, 2.25a, 2.27a
C. Numerical Descriptive Measures	Chapter 3 & A3.1 (Omit Section 3.4) & Group Data Calculations Handout	3.2, 3.4, 3.6, 3.7, 3.21, 3.22, 3.28, 3.30, 3.34, 3.37, 3.62

AREA 2

TOPIC	TO READ	ASSIGNED PROBLEMS
A. Basic Probability	Chapter 4 & A4.1, Read Section 2.4 & Bayesian Handout	4.1, 4.2, 4.4, 4.5, 4.6, 4.8, 4.9, 4.14, 4.16, 4.18, 4.19, 4.21, 4.25, 4.26, 4.28 (Tree Diagrams), 4.29 (Tree Diagrams), 4.30, 4.32, 4.33, 4.36, 4.39, 4.40, 4.44, 4.45

AREA 3

TOPIC	TO READ	ASSIGNED PROBLEMS
A. Discrete Probability Distributions	Chapter 5 & A5.1 & Hypergeometric Handout	5.2, 5.3, 5.4, 5.18, 5.19, 5.23, 5.27, 5.30(Formula), 5.31(Table), 5.34, 5.44, 5.45
B. Normal Distribution	Chapter 6 [From data disk, substitute (browse, CD_Topics, cd06) for section 6.2)]	6.1, 6.2, 6.4, 6.5, 6.6, 6.9, 6.11, 6.23, 6.24, 6.28, 6.30, 6.31
C. Sampling Distributions	Chapter 7	7.1, 7.2, 7.5, 7.7, 7.9, 7.11, 7.12, 7.13, 7.18

AREA 4

The following area will be covered only if time permits:

TOPIC	TO READ	ASSIGNED PROBLEMS
A. Estimation	Chapter 8 & A8.1	8.1*, 8.2*, 8.4, 8.7*, 8.8*, 8.10, 8.11*, 8.13*, 8.18*, 8.22*

Problems with an * must be performed both by hand and by using EXCEL.

THE INSTRUCTOR RESERVES THE RIGHT TO MAKE CHANGES TO THIS SCHEDULE AS DEEMED NECESSARY. ANY CHANGES MADE WILL BE ANNOUNCED IN CLASS AND LISTED ON WEBCT.

IMPORTANT DATES

First Day of Fall Classes.....	SEPTEMBER 8
Last date to drop without a grade	SEPTEMBER 26
TEST 1.....	OCTOBER 9
Computer Assignment.....	OCTOBER 23
Last date to drop with a "W"	OCTOBER 24
Veteran's Day (University Closed).....	NOVEMBER 11
TEST 2.....	NOVEMBER 13
Last Day of Fall Classes.....	NOVEMBER 15
FINAL (8:00 – 10:00 PM Thursday)	NOVEMBER 20

Computer Assignment
DUE OCTOBER 23, 2008

The following data represents the outer dimensions of pens manufacturing by the Smith Company on two different machines.

Machine A

140	139	158	135	132	136	138
144	140	138	139	147	139	145
146	141	139	140	145	143	149
145	143	137	142	146	140	140
153	148	144	138	150	149	142
141	142	131	142	140	146	140
141	143	134	141	156	135	157
134	142	133	149	144	136	162

Machine B

148	142	145	145	121	147	153
141	143	143	141	140	140	148
146	141	142	144	137	140	140
148	138	145	145	142	144	144
145	148	139	136	141	140	143
139	141	137	141	132	145	139
148	142	133	140	141	136	138
175	158					

- 1) Enter the two data sets separately as two variables following the instructions on the Excel handout. When entering the readings for each set, make sure to place them under separate column headings.
- 2) Use Excel and PHStat to get the following printouts for each data sets:
 - a) Stem-and-Leaf Diagram
 - b) Box-and-Whisker Plot
 - c) Descriptive statistics
 - d) Histogram
- 3) Compare and contrast the outer dimensions in these two samples using **WORD**. How are the two sets of data different? (i.e. distribution, mean, mode, range, etc.) Describe in 100 or more words.
- 4) Turn in the computer printouts (clearly labeled) with your written explanation. **BE SURE TO PUT YOUR NAME AND SEAT NUMBER IN THE TOP MARGIN OF EACH PAGE USING EXCEL!**