MA 205: Elementary Statistics
Syllabus
S1:2012

SUMMER SESSION DATE: July 9 – July 20, 2012

COURSE DESCRIPTION

For more information on this course, including the official course description and any prerequisites, can be found in the GPS Catalog at [http://www.sjcme.edu/gpscatalog/](http://www.sjcme.edu/gpscatalog/)

COURSE INTRODUCTION

This course is designed to acquaint students with basic statistical concepts as well as with ways to interpret and report data. The focus of the course will be on developing and using methods employed in analyzing data. Topics will include: introduction to sampling design, measures of center, measures of variation, basic probability rules, random variables, confidence intervals, the normal distribution, hypothesis testing, chi-square procedures, and significance levels. The material will be presented through examples with the calculator and computer used as aids. A statistical software package will be used in campus computer labs during the summer session to produce summaries of data sets as well as for conducting hypothesis tests. No prior experience with the software is necessary. Instruction tutorials will be provided in class.

COURSE OBJECTIVES

Upon completion of this course, you should be able to do the following:

1. Working knowledge of the basic concepts used in statistics.
2. The skills needed to interpret statistics used in journal articles in your field.
3. Some familiarity with a statistical software package.
4. The foundation for future work in statistics.

REQUIRED TEXT(s) & MATERIAL


MA 205 Coursepack – will be provided during first day of class.

Scientific Calculator.
COURSE FORMAT

The course will consist of a three-hour class which meets five times per week. The classes will be a combination of lecture, discussion, in-class activities, and computer work focused on the material from the text. Daily assignments will be collected consisting of handwritten and computer work. Students will have the opportunity to ask questions on the homework before the assignments are collected. There will be one midterm exam and one final.

Class Period 1
Topics: Nature of Statistics, Organizing Data, Descriptive Measures
Required Readings: Chapters 1 & 2, Sections 3.1 – 3.2

Assignments: Problems 2.1, 2.7, 2.14, 2.16a, 2.17, 2.27, 2.61, 2.99, 3.1, 3.3, 3.5, 3.15, 3.17, 3.71, 3.73

Class Period 2
Topics: Boxplots, Probability, Random Variables
Required Readings: Sections 3.3 – 3.4 & 5.1 – 5.5

Assignments: Problems 2.103, 2.107, 3.105, 3.121, 3.147, 5.7, 5.15, 5.21, 5.22, 5.41, 5.45, 5.53, 5.55, 5.69, 5.79, 5.83, 5.95, 5.109ab, 5.113, Computer Assignment I (will be provided in class)

Class Period 3
Topics: Normally Distributed Random Variables, Sampling Distribution of the Sample Mean
Required Readings: Chapter 6, Sections 7.1 – 7.2


Class Period 4
Topics: Sampling Distributions (continued), Confidence Intervals for One Population Mean
Required Readings: Sections 7.3, 8.1 – 8.2

Assignments: Problems 6.97, 6.107, 7.47, 7.49, 7.69abde, 7.71acd, 8.13, 8.33, 8.35,
Review problems for midterm (will be provided in class)

**Class Period 5**
Topics: Midterm Exam, Confidence Intervals for One Population Mean (continued)
Required Readings: Sections 8.3 – 8.4

Assignments: Problems 8.65, 8.83, 8.95,
Computer Assignment II (will be provided in class)

**Class Period 6**
Topics: Introduction to Hypothesis Testing, Tests for One Population Mean, p-values
Required Readings: Chapter 9


**Class Period 7**
Topics: Inferences for Two Population Means
Required Readings: Chapter 10

Assignments: Chapter 10 Handout (will be provided in class)
Computer Assignment III (will be provided in class)

**Class Period 8**
Topics: Chi-Square Procedures
Required Readings: Sections 12.1 – 12.4

Assignments: Chi-Square Handout (will be provided in class)
Computer Assignment IV (will be provided in class)

**Class Period 9**
Topics: Descriptive Methods in Regression
Required Readings: Sections 4.1 – 4.4

Assignments: Prepare for Final Exam on Day 10

**Class Period 10**
Topics: Final Exam
Required Readings: (none)

Assignments: (none)
COURSE POLICIES AND PROCEDURES

Current information regarding College policies affecting your course can be found on the Resources/Policy section of the course homepage. On this page, you will find vital information, including the following:

- Current Student Handbook, outlining course-specific policies
- Access to support resources, including advising and online tutorial services
- Student Success Guides

SUBMITTING ASSIGNMENTS

Refer to your online classroom for directions on how to submit your assignments.

EVALUATION

- Homework Assignments ................................................................. 40%
- Exam 1 ......................................................................................... 30%
- Final Exam .................................................................................... 30%

The following grading system will be applied to the numerical grade.

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INSTRUCTOR INTRODUCTION

Welcome to Math 205, Elementary Statistics. If you are like many of the students who have enrolled in this course, you are probably feeling a little anxious. Let me try to allay some of your fears.

My name is Grace Coulombe and I am a member of the Summer Program faculty at Saint Joseph's College. I hold a full time position at Bates College, where I am a Lecturer in Mathematics as well as the Director of the Mathematics & Statistics Workshop—a resource center for students with difficulties in mathematics. I have a master’s degree in Mathematics from Boston College and over 17 years of experience teaching at both the college and high school level. One of my primary duties at Bates is to work with students who possess a great deal of anxiety about math and to help them work through their difficulties. In addition to my regular duties at the Workshop, I have taught courses in calculus, quantitative reasoning, abstract mathematics, and calculus-based statistics at Bates.

The attached course description might at first seem intimidating given that the pace of the summer course will be rapid. If you can find the time, I would strongly encourage you to read the first three chapters of the text before arriving in July. These chapters set the framework for much of what we will do throughout the summer session. When you arrive in July you will collect some data for analysis on the first day of class that we will use to illustrate various statistical methods and tests. Lastly, keep in mind that although you may have difficulty working through the homework we will always take time to address those questions in class before homework is collected.

I look forward to working with you this summer.

Sincerely,
Grace Coulombe
HOW DO I ACCESS DISABILITIES SERVICES?

Anyone who would like information or needs access to accommodations or services related to disabilities should contact the college’s Accommodations Office. Please contact your Academic Advisor or refer to the Student Handbook for more information.

This course was developed by Saint Joseph’s College of Maine for the exclusive use of students enrolled in the College’s Division of Graduate and Professional Studies.

For more information on this course, including the official course description and any prerequisites, can be found in the GPS Catalog at http://www.sjcme.edu/gpcatalog/

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