

SUMMER SESSION SYLLABUS

Hybrid Course

MA 205H: Elementary Statistics

C5: 2009



Saint Joseph's College of Maine

**DIVISION OF GRADUATE &
PROFESSIONAL STUDIES**

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Welcome to: MA 205H Elementary Statistics

Summer Session #1

Course Start Date: June 15

Online Dates:

June 15 – 21

June 27 – July 24

On Campus Dates:

June 22 - 26

Course End Date: July 24

COURSE DESCRIPTION

An introduction to statistical methods of data analysis. Topics include descriptive statistics, probability distributions, hypothesis testing and statistical inference, analysis of variance, and regression.

IMPORTANT RESOURCES

If you have any questions regarding your course materials, please contact your academic advisor (1-800-343-5498) and/or our book vendor EdMap. You can reach EdMap by phone or email:

1-(800)-274-9104

<http://www.shop-edmap.biz/sjs/>

All Saint Joseph's College students must have a library card for the Wellehan Library prior to arriving on campus. To obtain your card, if you do not already have one, please call the library or visit their Website:

1-(800) 343-5498 ext. 7725

<http://www.sjcme.edu/library/index.htm>

REQUIRED TEXT

The required textbook: Weiss, Neil, Elementary Statistics, 7th ed., Pearson Education, Boston.

REQUIRED ARTICLES

The New York Times, daily.

Your Instructor

Wednesday, February 11, 2009

Hello Friends,

Welcome to the world of Statistics. We are going to have a great time together this summer. We will crunch data, analyze current graphics, and eat chocolate chip cookies – in that order.

I will demonstrate the concept that “Statistics occurs in everyday life” with real life examples from my family. I will also demonstrate statistical topics through interactive participation.

If this anticipation is too great a burden, or if you just want to call me and chat, my phone number is 203. 484. 9915. You can also send me an email at gkarbowski@sjcme.edu .

If you are a bit apprehensive about the course, enclosed is a document, entitled “MessagesFormerStatStudents.doc”. This is a compilation of pearls of wisdom and advise from my former St. Joe’s students of the summer 2006 session.

I currently teach Statistics and Mathematics at Quinnipiac University and privately consult.

Happy Number Crunching!!!

Genevieve

Student Resources



COURSE POLICIES AND PROCEDURES

Current information regarding College policies affecting your course can be found on the Resources/Policy section of the ANGEL course homepage.

On this page, you will find vital information, including the following:

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

SUBMITTING ASSIGNMENTS

Instructions on how to submit your assignment to your instructor can be found on your ANGEL course site.

Course Overview



COURSE INTRODUCTION

This course is an introduction to statistical methods of data analysis. Topics include descriptive statistics, probability distributions, hypothesis testing, statistical inference, research methodology, estimation, and analysis of variance. The student will gain an understanding of research concepts, experimental design, and statistical models as related to topics in business and health.

Along with the formal presentation of statistical topics and theory, the understanding that “Statistics occurs in everyday life” will be gained. Students will have the necessary mathematical tools to enable them to conduct statistical research on everyday events and make decisions based upon numbers. Actual classroom projects, using the New York Times will be undertaken.

COURSE OBJECTIVES

Upon completion of the course the student will have the research tools necessary to design and carry out independent research and make decisions based upon numbers.

COURSE FORMAT

1. Review and highlights of Weiss as well as other materials.
2. Discussion of timely newsworthy statistical issues.
3. Excel materials.
4. On-line discussions and submissions of assignments.

COURSE GUIDELINES

The course will begin with one week online. Then the on-campus part of the course will consist of a three hour class, meeting five times for one week. The class structure will consist of lecture, discussion, hands-on projects, and computer applications. Material will

be from a variety of sources. Daily assignments will be collected and graded. There will be one exam and one project. After the completion of the on campus part of the course, the on-line part of the course will continue.

EVALUATION

Projects and assignments are assigned per class and due at the beginning of the following class. Projects and assignments are cumulative, meaning each project/assignment builds upon the prior project/assignment. Late projects/assignments will be deducted by 5% of the each grade per missed class. Copy all projects prior to submitting, and submit the original. Bring all projects to each class. Any data manipulation, i.e., changing the value of the data point(s), or any copying or sharing of data as determined by the instructor and not specified by the instructor, is an automatic zero for that project/assignment for all the students involved. Data then must be re-collected, cleaned and verified by the instructor. The project/assignment must then be resubmitted and graded.

Grading in the course will based on the distribution below.

Projects	20%
Homework Assignments	20%
Exam 1	30%
Final Exam	30%

PLEASE NOTE: If life gets in the way of your online classroom responsibilities, you must notify your instructor as soon as you aware that events may occur that may inhibit you from participating at the required level.

Before we meet on campus, please look over the material in your Weiss. It is important that you become familiar with this material prior to our meeting. Do not memorize formulas, just read. Also, post a bio on the course discussion board during week one. During the on campus portion of the course, I will introduce the concepts and Excel. We will complete a portion of the problems listed below. The problems that we do not complete will be completed in Excel and sent electronically to me, along with other assigned work during the online part of the course. The final class will be a wrap up of the entire course along with an informal presentation of your project.

Ch.	Title	Problems
1	The Nature of Statistics	1.17; 1.19 1.24
2	Organizing Data	2.18 2.42 2.43 2.59

3	Descriptive Measures	3.5; 3.9 3.50 3.95 3.124
5	Probability and Random Variables	5.13 5.19 5.33 5.37 5.45 5.55
8	Confidence Intervals for One Population Mean	8.33
9	Hypothesis Tests for One Population Mean	9.5 9.29 9.59 9.127
12	Chi Square Procedures	12.33 12.77

Class Schedule

PERIOD	TOPIC	ASSIGNMENT
Week 1 On-line. Introduction. Population. Samples. Variables. Data. Research Methodology. “Questions to Ask...” Critique. Survey Research. Survey Research. Preliminary Data Analysis- Frequency Tables.	Weiss Chapters 1, 2, 3, 4. Supplementary Materials.	Read Weiss Chapters 1, 2, 3, 4. Critique an article using “Questions to Ask...” as the format. Post your bio on the discussion board

<p>On Campus Monday 06-22-09 Week 2</p> <p>Research Methodology. “Questions to Ask...” Survey Research. Preliminary Data Analysis: Central Tendency, Measures of Dispersion Frequency Tables Raw and Grouped. Graphic representations. .</p>	<p>Weiss Chapters 1, 2, 3, 4.</p>	<p>Problems to be assigned. Supplementary Materials.</p>
<p>Tuesday 06-23-09 Week 2</p> <p>Estimation. Hypothesis Testing One Sample Testing: (Z Test, T Test) Computer Applications.</p>	<p>Weiss, Chapters 8, 9.</p>	<p>Problems to be assigned. Supplementary Materials.</p>
<p>Wednesday 06-24-09 Week 2</p> <p>Hypothesis Testing Two Sample Testing: (T pooled).</p>	<p>Weiss, Chapter 10.</p>	<p>Problems to be assigned. Supplementary Materials.</p>
<p>Thursday 06-25-09 Week 2</p> <p>Hypothesis Testing Chi Square Goodness- of-Fit; Chi Square Independence.</p>	<p>Weiss, Chapter 12.</p>	<p>Problems to be assigned. Supplementary Materials.</p>
<p>Friday 06-26-9 Week 2</p> <p>In class Project Computer Applications. Selected Topics</p>	<p>Supplementary Materials.</p>	<p>Problems to be assigned. Supplementary Materials.</p>

<p>Week 3 On-line</p> <p>Computer Applications. Selected Topics: One Sample Testing</p>	Supplementary Materials.	Problems to be assigned. Supplementary Materials.
<p>Week 4 On-line</p> <p>Computer Applications. Selected Topics: Two Sample Testing</p>	Supplementary Materials.	Problems to be assigned. Supplementary Materials.
<p>Week 5 On-line</p> <p>Computer Applications. Selected Topics: Chi Square</p>	Supplementary Materials.	Problems to be assigned. Supplementary Materials.
<p>Week 6 On-line</p> <p>Computer Applications. Selected Topics: Survey Research. Summary</p>	Supplementary Materials.	Problems to be assigned. Supplementary Materials. Final Project due.

Final Project



To help apply the concepts covered in the course, we will conduct survey research. The survey will be given to you the first day of class. The interviewing of the recipients will occur on campus after class.

The following steps will be explained on the first day of class on campus.

- Clean, code, and verify the data.
- Enter the coded data into a spreadsheet format, Excel.
- Calculate the following using the continuous variables:
 - Mean
 - median
 - mode
 - maximum, minimum, range
 - Quartile1,
 - Quartile3
 - variance
 - standard deviation.
- Answer two research questions and show all the seven steps in Hypothesis Testing.

The results will be presented on the last day of class.

The Online Learning Environment



Online Discussion: What Is Expected of You

1. Class participation using the course discussion board is an essential learning activity and a required component of this course.
2. If life gets in the way of your course, then you must notify your instructor as soon as possible. Your instructor is here to help you learn as much as you can; he/she needs to know what is happening in order to facilitate your learning.
3. You are required to substantively contribute to the ongoing discussion. Substantive postings are thoughtful and add value to the discussion by offering your critical and creative thoughts and by building upon the thoughts and comments of others.
4. All postings in response to discussion questions should be on point, concise, and succinct.
5. The purpose of engaging in discussion is to extend your learning and to deepen your understanding of concepts presented in the course. The expectation is **not** to have everyone repeat what was read in the week's readings but to share ideas, perspectives, experiences, and understanding; always trying to go beyond what we (currently) know.

ANGEL Information

This course has an online ANGEL component. Please review the checklist below. Before your course begins you will receive a letter from the College with instructions on how to access your account, which will include your log on and password.

If you need technical support, please contact the 24-hour Collegis HelpDesk:
1-(877) 725-4357 or email: <https://hdo.collegis.com>

Checklist for Online Learners

In order to complete this course, you will need the following:

- ANGEL account (will be assigned to you by Saint Joseph's College)
- Basic computer skills
- Computer with speakers or headphones
- Internet access
- Required materials