THE COLLEGE AT OLD WESTBURY
STATE UNIVERSITY OF NEW YORK

Department of Mathematics, Computer & Information Science

MATHEMATICAL STATISTICS
MA 5230 • SYLLABUS FALL 2013

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TEXTBOOK: Introduction to the Practice of Statistics David Moore, George P. McCabe, Bruce Craig. ISBN-13: 978-1429240321.

PREREQUISITES: MA2320: Calculus II, MA3160: Linear Algebra and MA3210: Introduction to Probability and Statistics.

COURSE DESCRIPTION:
Designed for upper division students in mathematics or statistics. Review of probability, inferences, regression and correlation. Also we will cover ANOVA, analysis of covariance, experimental design, building statistical models, and use of computer statistical packages.

COURSE OBJECTIVES: After successful completion of this course students should understand experimental design and be familiarity with scripting in a statistical package, as well as, understand the application of statistics. The student should be able to model a basic real world scenario with statistics, design an experiment and perform the statistical analysis.

COURSE EVALUATION & GRADING: Your grade for the course will be based on your homework/quiz performance and a computer project (10%), two tests (40%) and one project (15%) and a comprehensive final exam (35%). The grading scale is as follows:

A = [93, 100] **A−** = [90, 92]	**B +** = [87, 89] **B** = [83, 86] **B −** = [80, 82]	**C +** = [77, 79] **C** = [73, 76] **C −** = [70, 72]	**D +** = [67, 69] **D** = [63, 66] **D −** = [60, 62]	**F** = [0, 59]

TUTORIAL: Drop-in tutorial is available in the mathematics learning center, Room **A118.**

ACCOMMODATIONS FOR STUDENTS WITH SPECIAL NEEDS: SUNY/Old Westbury is committed to assuring that all students have equal access to learning and social activities on campus. If you have or suspect you may have a physical, psychological, medical or learning disability that may impact how you function academically, please contact Dr. Lisa Whitten, Director of the Office of Services for Students with Disabilities (OSSD). We will determine if you qualify for academic accommodations and arrange them with your professors if you do. Our location is Academic Village, D112, and you can reach us at 516-876-3009, TTY: (516) 876-3083, or whittenl@oldwestbury.edu.

HYBRID NATURE OF THE COURSE:

This course will be split into two distinct pieces: the in-class portion and the online/self study portion. For the in-class portion we will meet once per week (on Tuesdays) and we will typically start with a quiz and cover old material and a bit of new material. The online/self study portion will include readings, homework sets from the book, presentations, as well as a few self paced learning modules on a proprietary statistical software package (SAS). There will be a weekly online assignment due – to be submitted on line.

You will be expected to be able to complete the assignments both by hand as well as on the statistical software. In-class quizzes and tests will be done typically on paper without any technology. And some collected assignments and your semester project will need to be done with some software.

	In-Class	Online
Week 1	Introduction and Lesson 1: Ch 1 and 2	Online Quiz 1
Week 2	Quiz 1 (on chapter 1 and 2), Lesson 2: Ch 3	Online Quiz 2
Week 3	Quiz 2 (on chapter 3), Lesson 3: Ch 4	Online Quiz 3
Week 4	Quiz 3 (on chapter 4), Review for Test 1	
Week 5	Test 1 on Ch 1-4	SAS: Enterprise Guide Intro Online
Week 6	Lesson 4: Ch 5 and Ch 6.1 and 6.2	Online Quiz 4
Week 7	Quiz 4 (on chapter 5 and 6), Lesson 5: Ch 6.3 and 6.4 and Ch. 7	Online Quiz 5
Week 8	Quiz 5 (on chapter 6 and 7), Lesson 6: Ch 8	Online Quiz 6
Week 9	Quiz 6 (on chapter 8), Lesson 7: Ch 9	Online Quiz 7
Week 10	Quiz 7 (on chapter 9), Review for Test 2	
Week 11	Test 2 on Ch 5-9	SAS: Enterprise Guide Intro Online Part II
Week 12	Lesson 8: Ch 10 and Ch 12	Submit Data set for approval for analysis and Online Quiz 8
Week 13	Quiz 8 (on chapter 10 and 12), Lesson 9: Ch 13	Online Quiz 9
Week 14	Quiz 9 (on chapter 13). Bring draft analysis and receive the professor's review.	
Week 15	Turn in Reports and presentations – Review for final	

ASSIGNMENTS FROM THE BOOK:

Chapter 1, Distributions

1.1: 21, 29 ,30, 39

1.2: 66, 68, 72, 75, 86

1.3: 112, 116, 120, 122, 126, 128, 131

Chapter 2, Relationships

2.1: 13, 14, 24, 29, 30, 31, 37

2.2: 47, 53, 54

2.3: 66, 68, 77, 78, 84

2.4: 94, 95, 96, 102, 125

Chapter 3, Producing Data

3.1: 17, 18, 27, 30, 34(a), 47
3.2: 53, 55, 58, 63, 66, 72
3.3: 82, 83, 86, 95
3.4: 102, 103, 107, 108, 112

Chapter 4, Probability

4.1: 6, 7, 9
4.2: 19, 21, 25, 27, 33, 37
4.3: 49, 50, 54, 55, 57, 63, 64
4.4: 72, 73, 77, 78, 85, 86, 87

Test 1: Tuesday, September 24

Chapter 5, Sampling Distributions

5.1: 7, 8, 9, 11, 21, 23
5.2: 41, 43, 45, 47, 54, 55, 56

Chapter 6, Introduction to Inference

6.1: 10, 11, 12, 13, 15, 17, 22, 23, 31
6.2: 50, 51, 52, 53, 54, 56, 57, 58, 62, 63
6.3: 86, 87, 89, 93, 95
6.4: 104, 105, 111, 125

Chapter 7, Inference for Means

7.1: 15, 16, 18, 21, 22, 23, 33
7.2: 61, 62, 69, 70, 72, 73

Chapter 8, Inference for Proportions

8.1: 13, 14, 17, 25, 26, 37
8.2: 52, 53, 61, 62, 64

Chapter 9, Inference for Two-Way Tables

9: 17, 23 27, 28, 35,55

Test 2: Tuesday, November 5

Chapter 10, Inference for Regression

10.1: 6, 7, 8, 10, 12, 20, 37

Chapter 12, One-Way ANOVA

12: 9, 10, 11, 13, 14, 15, 25

Chapter 13, Multiple Regression

13: 9, 10, 11, 13, 14, 15, 25

SAS Tutorial in class,

Enterprise Guide and SAS base programming

Computer Project and presentation: Tuesday, Decmber 3

Final Exam: December 17, 2013.