

**Sul Ross State University Rio Grande College**  
**MATH 4304**  
**Probability and Statistics II**

**Location:** Web

**Term:** Spring 2016

**Lecturer:** Patricia Nicosia, Ph.D.

**Telephone:** 703-4836 (Office)

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**Text:** 1. Larson & Farber, *Elementary Statistics: Picturing the World*, 6th Edition, Prentice Hall Publishing Company. ISBN 978-0-321-91121-6

2. Graphing Calculator Manual, ISBN 978-0-321-69379-2

3. Video Resources on DVD, ISBN 978-0-321-69374-7

**Description:** Math 4304 will include the following topics- random variables and distributions, estimation and hypothesis testing, linear regression and correlation, analysis of variance, and multiple regression.

Prerequisite- Math 3302

**Objectives:** The student will be able to-understand principles of hypothesis testing, use the law of large numbers and the central limit theorem in the process of statistical inference, estimate parameters using point estimators, describe and analyze bivariate data using various techniques, analyze and interpret statistical information, make inferences about a population, and apply knowledge of designing, conducting, analyzing, and interpreting statistical experiments to investigate real-world problems.

**Program Learning Outcomes:** The graduating student will be able to: Demonstrate content knowledge in mathematics including arithmetic, algebra, geometry, probability, statistics, and calculus. Research a topic and communicate their knowledge orally and in writing.

**Grading:** Your grade will be based on ten quizzes (10% each). Grades will be assigned as follows: A: 90%-100%, B: 80%-89%, C: 70%-79%, D: 60%-69%, F: below 60%.

**Schedule:** Math 4304 will cover Chapters 4 – 9.

**Calculator:** You will need a TI-83 graphing calculator.

**Class Schedule:**

**January 19**

Syllabus

**January 26**

Probability Distributions, Binomial Distributions, View videos 4.1, 4.2

**February 2**

Chapter 4 Review Exercises, page 225 – 227 (Textbook), problems 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 25

Answers must be submitted before midnight on February 2.

**February 9**

Introduction to Normal Distributions, The Standard Normal Distribution, View videos 5.1, 5.2, 5.3

**February 16**

Sampling Distributions and the Central Limit Theorem, Normal Approximations to Binomial Distributions, View videos 5.4, 5.5

Chapter 5 Review Exercises, page 286 – 289 (Textbook), problems 7, 9, 11, 17, 29, 31, 33, 55, 63, 65, 69

Answers must be submitted before midnight on February 16.

**February 23**

Confidence Intervals for the Mean- Large Samples, Small Samples, View videos 6.1, 6.2

**March 1**

Confidence Intervals for Population Proportions, Confidence Intervals for Variance and Standard Deviation, View Videos 6.3, 6.4

Chapter 6 Quiz (Textbook), problems 1, 2, 3 on page 340

Answers must be submitted before midnight on March 1.

**March 8**

Introduction to Hypothesis Testing, View Video 7.1

Chapter 6 Quiz (Textbook), problems 4, 5, 6 on page 340

Answers must be submitted before midnight on March 8.

**March 22**

Hypothesis Testing for the Mean (Large Samples), View video 7.2

**March 29**

Hypothesis Testing for the Mean (Small Samples), View video 7.3

Hypothesis Testing for Proportions, View video 7.4

Chapter 7 Quiz (Textbook), problems 1, 2 on page 410

Answers must be submitted before midnight on March 29.

**April 5**

Hypothesis Testing for Variance and Standard Deviation, View vides 7.5

Chapter 7 Quiz (Textbook), problems 3, 4 on page 410

Answers must be submitted before midnight on April 5.

**April 12**

Testing the Difference Between Means (Large Independent Samples), Testing the Difference Between Means (Small Independent Samples), view videos 8.1, 8.2

Chapter 7 Quiz (Textbook), problems 5, 6 on page 410

Answers must be submitted before midnight on April 12.

### **April 19**

Testing the Difference Between Means (Dependent Samples), Testing the Difference Between Proportions, View videos 8.3, 8.4

Chapter 8 Quiz (Textbook), problems 1, 2 on page 460

Answers must be submitted before midnight on April 19.

### **April 26**

Correlation, Linear Regression, View Videos 9.1, 9.2

Chapter 8 Quiz (Textbook), problems 3, 4 on page 460

Answers must be submitted before midnight on April 26.

### **May 3**

Chapter 9 Quiz (Textbook), problems 1, 2, 3, 4, 5 on page 520

Answers must be submitted before midnight on May 3.

### **Additional Information:**

1. Sul Ross State University Rio Grande College is committed to equal access in compliance with the Americans with Disabilities Act of 1973. It is the student's responsibility to initiate a request for accessibility services. Students seeking accessibility services must contact the Student Support Specialist on their campus.

2. Office Location: Del Rio , Room 219

3. Office Hours:

Monday: 9 – 9:30 am, 11 – 12 pm

Tuesday: 9 – 9:30 am, 11 - 12 pm

Wednesday: 9 – 9:30 am, 11 – 12 pm

Thursday: 9 – 9:30 am, 11 - 12 pm

Also available anytime I'm in my office and by appointment.

*\*\*If I am teaching at another location, I will be available at that site.*

**Distance Education Statement: Students enrolled in distance education courses have equal access to the university's academic support services, library resources, and instructional technology support. For more information about accessing these resources, visit the SRSU website. Students should submit online assignments through Blackboard which require secure login information to verify students' identities and to protect students' information. Exams will be taken at the RGC site in which you are officially registered. The procedures for filing a student complaint are included in the student handbook. Students enrolled in distance education courses at Sul Ross are expected to adhere to all policies pertaining to academic honesty and appropriate student conduct, as described in the student handbook. Students in web-based courses must maintain appropriate equipment and software, according to the needs and requirements of the course, as outlined on the SRSU website.**