Note:

Course content may be changed, term to term, without notice. The information below is provided as a guide for course selection and is not binding in any form, and should <u>not</u> be used to purchase course materials.

COURSE SYLLABUS

MATH 211
INTRODUCTION TO STATISTICAL ANALYSIS

COURSE DESCRIPTION

An introduction to statistical analysis for students with a background in calculus. Includes probability theory, probability distributions, expectation, statistical inference, regression and correlation.

RATIONALE

As members of a society increasingly devoted to the use and misuse of numbers, students must learn to correctly interpret statistical presentations in all areas and especially in their major fields. This course is designed to give the students a working knowledge of statistics with an emphasis on application rather than theory.

I. **PREREQUISITE**

   For information regarding prerequisites for this course, please refer to the Academic Course Catalog.

II. **REQUIRED RESOURCE PURCHASE**

   Click on the following link to view the required resource(s) for the term in which you are registered: http://bookstore.mbsdirect.net/liberty.htm

III. **RECOMMENDED RESOURCE**

   * Students who desire a physical copy of the course textbook are welcome to purchase it.
   Devore, J. (2016). *Probability & Statistics for Engineering and the Sciences*, 9th Edition, Cengage Learning.

IV. **ADDITIONAL MATERIALS FOR LEARNING**

   A. Computer with basic audio/video output equipment

   B. Internet access (broadband recommended)

   C. Blackboard recommended browsers

   D. Microsoft Office

V.   **MEASURABLE LEARNING OUTCOMES**

Upon successful completion of this course, the student will be able to:

A.   Compute probabilities associated with multiple events.

B.   Compute the mean and variance of several common discrete and continuous probability distributions and use them in practical applications.

C.   Create confidence intervals for unknown parameters.

D.   Perform hypothesis tests.

E.   Determine the correlation between two variables and develop linear regression models which predict the value of one variable as a function of the other.

VI.   **COURSE REQUIREMENTS AND ASSIGNMENTS**

A.   Textbook readings and lecture presentations/notes

B.   Course Requirements Checklist

After reading the Course Syllabus and Student Expectations, the student will complete the related checklist found in Module/Week 1.

C.   Homework (8)

The student will complete a homework assignment each module/week in the WebAssign that is associated with the course textbook. Typically, assignments will cover 4 – 5 sections from the textbook, but this will vary depending on the length and difficulty of each section included in the assignment.

D.   Projects (2)

These projects will apply course concepts to real-life situations and further explore topics introduced in the text.

E.   Tests (4)

Each test will cover the Reading & Study material for two modules/weeks: the material assigned during the test module/week and the material from the previous module/week. Tests are not cumulative. Each test will be open-book/open-notes, contain 20 multiple-choice and short answer questions, and have a 2-hour and 45-minute time limit. These tests will be completed in the WebAssign that is associated with the course textbook.

VII. **COURSE GRADING AND POLICIES**

    A.   Points

Course Requirements Checklist	10
Homework (8 at 50 pts ea)	400
Projects (2 at 50 pts ea)	100
Tests (4 at 125 pts ea)	500
Total	1010

    B.   Scale

        A = 900–1010 B = 800–899 C = 700–799 D = 600–699 F = 0–599

    C.   Disability Assistance

        Students with a documented disability may contact Liberty University Online's Office of Disability Academic Support (ODAS) at LUOODAS@liberty.edu to make arrangements for academic accommodations. Further information can be found at www.liberty.edu/disabilitysupport.

COURSE SCHEDULE

MATH 211

MODULE/ WEEK	READING & STUDY	ASSIGNMENTS	POINTS
1	Devore: Sections 1.1 – 1.4, 2.1 2 presentations	Course Requirements Checklist Class Introductions Homework 1	10 0 50
2	Devore: Sections 2.2 – 2.5 2 presentations	Homework 2 Test 1	50 125
3	Devore: Sections 3.1 – 3.6 2 presentations	Homework 3 Project 1	50 50
4	Devore: Sections 4.1 – 4.4 2 presentations	Homework 4 Test 2	50 125
5	Devore: Sections 5.1, 5.4, 6.1, 7.1 2 presentations	Homework 5	50
6	Devore: Sections 7.2 – 7.4 2 presentations	Homework 6 Test 3	50 125
7	Devore: Sections 8.1 – 8.4, 9.1 2 presentations	Homework 7 Project 2	50 50
8	Devore: Sections 9.4, 12.1, 12.2, 12.5 2 presentations	Homework 8 Test 4	50 125
		TOTAL	1010

DB = Discussion Board

NOTE: Each course module/week (except Module/Week 1) begins on Tuesday morning at 12:00 a.m. (ET) and ends on Monday night at 11:59 p.m. (ET). The final module/week ends at 11:59 p.m. (ET) on **Friday**.