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.

LIBERTY UNIVERSITY.

COURSE SYLLABUS

MATH 201
INTRODUCTION TO PROBABILITY AND STATISTICS

COURSE DESCRIPTION

Introduction to descriptive statistics and probability, probability distributions, estimation, tests of hypotheses, chi-square tests, regression analysis, and correlation with applications in business and science. (Crosslisted with BUSI 230)

RATIONALE

As members of a society increasingly devoted to the use and misuse of numbers, students must learn to correctly interpret and construct statistical presentations in all areas of public discourse, especially in their major fields. This course emphasizes the major applications of statistical knowledge rather than its theory. The course seeks to educate men and women who will make important contributions to their workplaces and communities, follow their chosen vocations as callings to glorify God, and fulfill the Great Commission.

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**

Larson, R., & Farber, B. (2015). *Elementary statistics: Picturing the world—With DVD* (6th ed.). Boston, MA: Pearson. ISBN: 9780321911216.

IV.   **ADDITIONAL MATERIALS FOR LEARNING**

    A.   Computer with basic audio/video output equipment

    B.   Internet access (broadband recommended)

    C.   Please note, technical skills for this course include:
- Basic Blackboard navigation skills

    D.   MyStatLab software. Available at www.pearsonmylabandmastering.com. To be admitted into this site, the student will provide an access code which comes with the purchase of the Larson & Farber text.

    E.   CutePDF software. Available for free at www.cutepdf.com.

V.   **MEASURABLE LEARNING OUTCOMES**

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

    A.   Construct and interpret appropriate graphical representations of data.

    B.   Compute statistical measures which describe the location, dispersion, and placement of data values.

    C.   Compute probabilities associated with multiple events and common distributions.

    D.   Create confidence intervals for unknown parameters.

    E.   Perform hypothesis tests.

    F.   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

    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.   Course Introduction Quiz

    The student must complete the Course Introduction Quiz in MyStatLab and must receive a score of 100% before he/she can start any of the other assignments in MyStatLab. This quiz will be open-book/open-notes and cover information from the Course Syllabus and announcements offered in Modules/Weeks 0 and 1. The student will receive unlimited attempts for this quiz.

    D.   Exercises (8)

    Each module/week, the student will complete a set of exercises which will correlate with the assigned Reading & Study material. These exercises will be completed using MyStatLab.

E.   Projects (4)

Modules/Weeks 1, 3, 5, and 7 will each have an individual project. These projects will apply statistics to real-life situations and demonstrate links between statistics and the Bible. Projects 2 and 4 will be completed in Discussion Board Forums 1 and 2.

F.   Core Competency Quiz

This quiz covers material from the course selected to align with Liberty University's Core Competency Learning program. The quiz will be assigned in MyStatLab.

G.   Exams Reviews (4)

The review assignment for each exam must be completed with a grade of at least 85% before the exam can be taken. Each question on all the Exam Reviews can be worked as many times as needed to get full credit. All the Exam Reviews can be found in MyStatLab.

H.   Exams (4)

The student will complete exams during Modules/Weeks 2, 4, 6, and 8. Each exam will be timed, open-book/open-notes, and will cover 2 modules/weeks of material. The exams will be taken in MyStatLab.

VII.   COURSE GRADING AND POLICIES

A.   Points

Course Requirements Checklist		10
Course Introduction Quiz		0
Exercises	(8 at 35 pts ea)	280
Projects	(4 at 40 pts ea)	160
Core Competency Quiz		20
Exam Reviews	(4 at 10 pts ea)	40
Exams	(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.   Instructor Feedback and Response Time

Responses to student emails will be provided within 48 hours and assignment feedback will be given within 1 week from the assignment due date.

D.   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.

VIII. **QUALITY MATTERS SEAL OF APPROVAL**

This certification mark recognizes that this course met Quality Matters Review Standards.

Quality Matters (QM) is a non-profit organization committed to quality assurance in Online Education. Courses that have received the QM Seal of Approval have passed rigorous reviews by Quality Matters evaluators and maintain their approval for five years.

COURSE SCHEDULE

MATH 201

Textbook: Larson & Farber, *Elementary Statistics: Picturing the World* (2015).

MODULE/WEEK	READING & STUDY	ASSIGNMENTS	POINTS
1	Larson & Farber: sections 1.1–2.1 2 presentations	Course Requirements Checklist Class Introductions Course Introduction Quiz Exercises 1.1–2.1 Project 1	10 0 0 35 40
2	Larson & Farber: sections 2.2–2.5 1 presentation	Exercises 2.2–2.5 Exam Review 1 Exam 1	35 10 125
3	Larson & Farber: sections 3.1–3.4 1 presentation	Exercises 3.1–3.4 DB Forum 1/Project 2	35 40
4	Larson & Farber: sections 4.1–4.2, 5.1–5.3 1 presentation	Exercises 4.1–4.2, 5.1–5.3 Exam Review 2 Exam 2	35 10 125
5	Larson & Farber: sections 5.4, 6.1–6.3 1 presentation	Exercises 5.4, 6.1–6.3 Project 3	35 40
6	Larson & Farber: sections 7.1–7.3 1 presentation	Exercises 7.1–7.3 Exam Review 3 Exam 3	35 10 125
7	Larson & Farber: sections 7.4, 9.1–9.2 1 presentation	Exercises 7.4, 9.1–9.2 DB Forum 2/Project 4 Core Competency Quiz	35 40 20
8	Larson & Farber: sections 10.1–10.3 1 website	Exercises 10.1–10.3 Exam Review 4 Exam 4	35 10 125
		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**.