

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 not be used to purchase course materials.

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.

RATIONALE

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

I. PREREQUISITES

MATH 110 or the equivalent

II. REQUIRED RESOURCE PURCHASE

Click the following link to view the required resources for the term in which you are registered: <http://bookstore.mbsdirect.net/liberty.htm>

III. ADDITIONAL MATERIALS FOR LEARNING

- A. Computer with Internet access (broadband recommended)
- B. Scientific or graphing calculator
- C. Microsoft Word and Microsoft Excel (Microsoft Office is available at a special discount to Liberty University students.)
- D. MyMathLab software. Available at www.coursecompass.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.

IV. MEASURABLE LEARNING OUTCOMES

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

- A. Analyze probability distributions.
- B. Calculate a correlation coefficient and equation of a regression line.
- C. Calculate the probabilities of independent and dependent events.

- D. Define the confidence interval for the population mean and the population proportion.
- E. Develop a basic understanding of probability and statistics, their basic concepts and practical applications.
- F. Perform hypothesis testing.
- G. Summarize and analyze data.
- H. Use a chi-square distribution in a test of independence.
- I. Solve problems (including word problems) utilizing arithmetic concepts and algebraic equations. (Mathematics)
- J. Interpret information presented in various graphs and diagrams. (Mathematics)
- K. Solve problems using insight or logical reasoning. (Mathematics)
- L. Recognize flaws and logical inconsistencies in an argument. (Critical Thinking)

V. COURSE REQUIREMENTS AND ASSIGNMENTS

- A. Textbook readings and lecture notes
- B. Discussion Board forums (5)

Each student will submit a thread in the Discussion Board forum which will answer the posted questions of that particular module/week. The first module's/week's Discussion Board requires a thread and two replies (100 words each), and it must be completed individually; the remaining forums allow group work. The Group Discussion Boards require a thread (of at least 100 words containing the student's initial answers) and a set of replies which indicate the student's final answers, having compared the individual work against that of the group members.

- C. Exercises (8)

Each week, students will complete a set of exercises which will correlate with the weekly reading assignment. These exercises will be completed using the My MathLab software at www.coursecompass.com.

- D. Mini-Projects (2)

Modules/Weeks 3 and 6 will each have a small, individual assignment called a mini-project. The first project involves answering questions on the topic of standard deviation; the second project will require the student to engage in Scripture to answer questions about biblical prophecy.

- E. Quizzes (8)

Students will be required to complete eight quizzes, all of which will be assigned in the MyMathLab software at www.coursecompass.com. These quizzes are timed, open-notes, and open-book.

F. Core Competency Quiz

This quiz is part of Liberty's Core Competency Learning program. The quiz which will be assigned in the MyMathLab software at www.coursecompass.com must be taken by Friday at 11:59 p.m. (ET) of Module/Week 8. The quiz covers material selected to align with Liberty's Core Competency Learning program that was covered throughout the course.

G. Exams (2)

Students will complete a Midterm Exam and a Final Exam. Each exam will be timed and open-book, covering four weeks of material. Since these exams are graded by computer software, no partial credit will be given. To offset this, five points will be added to all exam scores, allowing for a maximum score of 100% on each exam.

VI. COURSE GRADING AND POLICIES

A. Points

Discussion Board forums (5 at 20 pts ea)	100
Exercises (8 at 10 pts ea)	80
Mini-Projects (2 at 20 pts ea)	40
Quizzes (8 at 30 pts ea)	240
Core Competency Quiz	20
Midterm Exam (Modules 1–4)	260
Final Exam (Modules 5–8)	260
Total:	1000

B. Scale

A = 900–1000 B = 800–899 C = 700–799 D = 600–699 F = 0–599

C. Instructor's Note

An eight-week, online math class requires hard work; 12 to 18 hours of investment per week is typical. The student will save time by not having to travel to and from school, and the schedule will not be as strict as an on-site class. On the other hand, there will not be face-to-face contact with the instructor and classmates, and work in groups will be more difficult. Therefore, an online course requires more independence, self-discipline, and self-motivation.

Any requests for extensions should be submitted to the instructor in advance of the deadline. The course needs to be a priority; a busy week or a family trip are not a valid excuse for not getting the work done. There will be a 10% deduction for each day an assignment is submitted late.

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.

COURSE SCHEDULE

MATH 201

Textbook: Larson & Farber, *Elementary Statistics: Picturing the World* (2012).

WEEK/ MODULE	READING & STUDY	ASSIGNMENTS	PTS
1	Larson & Farber: sections 1.1–2.1 1 presentation	Course Requirements Checklist	0
		Class Introductions	0
		DB Forum 1	20
		Exercises 1.1–2.1	10
		Quiz 1	30
		Extra Credit: Early Group Participation	–
2	Larson & Farber: sections 2.2–2.5 1 presentation	DB Forum 2	20
		Exercises 2.2–2.5	10
		Quiz 2	30
3	Larson & Farber: sections 3.1–3.4	Mini-Project 1: Standard Deviation	20
		Exercises 3.1–3.4	10
		Quiz 3	30
4	Larson & Farber: sections 4.1–4.2 & 5.1–5.3 1 presentation	DB Forum 3	20
		Exercises 4.1–4.2 and 5.1–5.3	10
		Quiz 4	30
		Midterm Exam	260
5	Larson & Farber: sections 5.4, 6.1–6.3	DB Forum 4	20
		Exercises 5.4 and 6.1–6.3	10
		Quiz 5	30
6	Larson & Farber: sections 7.1–7.3	Mini-Project 2: Prophecy & Probability	20
		Exercises 7.1–7.3	10
		Quiz 6	30
7	Larson & Farber: sections 7.4, 9.1–9.2	DB Forum 5	20
		Exercises 7.4, 9.1–9.2	10
		Quiz 7	30
8	Larson & Farber: sections 10.1–10.3 1 presentation	Core Competency Quiz	20
		Exercises 10.1–10.3	10
		Quiz 8	30
		Final Exam	260
TOTAL			1000

DB = Discussion Board

NOTE: Each course week (except 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 week ends at 11:59 p.m. (ET) on Friday.