

Course Syllabus

TITLE OF THE COURSE: *Mathematics 235: Introductory Statistics with Applications* (4 credits)

Professor: Dr. Robert Stolz, Office CA 310, telephone 693-1231, Email rstolz@uvi.edu,

Office Hours: Monday 10:00-12:00, Wednesday 10 – 12, 10AM -1PM and by appointment

COURSE DESCRIPTION:

Mathematics 235. *Introductory Statistics with Applications*

Students will be introduced to statistical concepts and will be required to interpret and communicate the results of statistical analyses. They will apply these concepts through projects based in local industry, education, government, society, and natural and physical models of the world and its human environment. Topics include, but will not be limited to: introduction to technology for statistical analysis; graphical and descriptive techniques for summarizing data; measures of center; measures of spread; correlation; probability ; design of experiments; sampling; analyzing relationships; statistical models; and hypothesis testing.

Prerequisite: Successful completion of Mathematics 140 or 143 or equivalent course.

COURSE OVERVIEW:

Topics to be covered include, but are not limited to:

- Data and Variables
- Measures of Center
- Measures of Spread
- Graphical Displays of Data
- Least Squares Regression
- Probability
- Sampling
- Normal Distributions
- Central Limit Theorem
- Confidence Intervals
- Designing Experiments

COURSE OBJECTIVES:

Students will be able to:

- Understand statistical concepts;
- Interpret and communicate the results of statistical analyses;
- Analyze genuine data from a variety of applications;
- Use technology, when appropriate, to analyze graphs and data;

REQUIRED: Rossman, Allan J., et. al Workshop Statistics, Discovery with Data with Fathom 3rd Edition

COURSE OUTLINE:

WEEK	topic	title
1	1	Data and Variables
	2	Data and Distributions
2	3	Drawing Conclusions form Studies
	4	Random Sampling
3	5	Designing Experiments
	6	Two Way Tables
4	7	Displaying and Describing Distributions
	8	Measures of Center
5	9	Measures of Spread
	10	More Summary Measures and Graphs
6	11	Probability

	12	Normal Distribution
7	13 14	Sampling Distributions: Proportions Sampling Distributions :Means
8	15 16	Central Limit Theorem Confidence Intervals: Proportions
9	17 18	Test of Significance: Proportions More Inference Considerations
10	19 20	Confidence Intervals: Means Tests of Significance: Means
11	21 22	Comparing Two Proportions Comparing Two Means
12	23 24	Analyzing Paired Data Goodness of Fit tests
13	25 26	Inference for Two Way Tables(Chi –squared distribution) Graphical Displays of Associations
14	27 28	Correlation Coefficient Least Squares Regression Line
15	29	Inference for Correlation and Regression

Finals Week Final Examination

TEACHING AND LEARNING METHODS:

The student is responsible for her/his own learning! The instructor’s role is to provide the student with contexts and opportunities that facilitate the learning process. During class, the students will be actively engaged with the material. They will work through activities carefully designed to lead them to discover fundamental statistical ideas for themselves. They are encouraged to work collaboratively with a partner on most of the activities. Some will require the use of the graphing calculator. The student should bring the graphing calculator to class at all times. We will have classroom discussions when appropriate.

Each student will complete one major group project to be taken from a local setting. There might also be mini projects throughout the semester. The students will have a chance to work on these in class, but much of the work on these projects will take place out of class. At the end of the semester, there will be a presentation of these projects in a mini-conference atmosphere.

STUDENT RESPONSIBILITIES:

Students will be required to attend class punctually and regularly, participate in class discussion and fully participate in class activities; this will be the basis of the class participation grade. The quizzes and examinations are required. There will be assignments collected periodically. No late assignments or make-up examinations will be accepted without an **acceptable** (preferably medical) excuse. The examinations are all cumulative, since material presented later in the course builds on earlier material.

METHODS OF EVALUATION:

Assessment Method	Percent of Final Grade	
Exam I	15%	tentatively Friday February 20
Exam II	15%	tentatively Friday April 3
Final Exam	20%	Final Exam Wed. May 5, 12:45-2:45
Quizzes/Homework/projects	25%	
Projects	25%	(see hand out for details)

A: 90% - 100%; B: 80-89; C: 70-79, D:60-69, F: less than 60