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:

<table>
<thead>
<tr>
<th>WEEK</th>
<th>topic</th>
<th>title</th>
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<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>Data and Variables</td>
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<td>2</td>
<td>Data and Distributions</td>
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<td>2</td>
<td>3</td>
<td>Drawing Conclusions form Studies</td>
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<td>Random Sampling</td>
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<td>3</td>
<td>5</td>
<td>Designing Experiments</td>
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<td>6</td>
<td>Two Way Tables</td>
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<td>4</td>
<td>7</td>
<td>Displaying and Describing Distributions</td>
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<td>8</td>
<td>Measures of Center</td>
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<td>5</td>
<td>9</td>
<td>Measures of Spread</td>
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<td>10</td>
<td>More Summary Measures and Graphs</td>
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<tr>
<td>6</td>
<td>11</td>
<td>Probability</td>
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</tbody>
</table>
12 Normal Distribution
7 Sampling Distributions: Proportions
13 Sampling Distributions: Means
8 Central Limit Theorem
15 Confidence Intervals: Proportions
9 Test of Significance: Proportions
17 More Inference Considerations
10 Confidence Intervals: Means
19 Tests of Significance: Means
11 Comparing Two Proportions
21 Comparing Two Means
12 Analyzing Paired Data
23 Goodness of Fit tests
13 Inference for Two Way Tables (Chi-squared distribution)
25 Graphical Displays of Associations
14 Correlation Coefficient
27 Least Squares Regression Line
15 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:

<table>
<thead>
<tr>
<th>Assessment Method</th>
<th>Percent of Final Grade</th>
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<tbody>
<tr>
<td>Exam I</td>
<td>15%</td>
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<td>Exam II</td>
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<tr>
<td>Final Exam</td>
<td>20%</td>
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<td>Quizzes/Homework/projects</td>
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<td>Projects</td>
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A: 90% - 100%; B: 80-89; C: 70-79, D:60-69, F: less than 60