

# MATH 1040 - Introduction to Statistics – Fall 2013

Section 04 MWF, 10:00–10:50 am, NIB 107, CRN: 44454/47297

Section 05 MWF, 11:00–11:50 am, NIB 150, CRN: 45304

**Instructor:** Bryan Bornholdt

**Phone:** 879–4256

**Email:** bornholdt@dixie.edu

**Office:** SNOW 138

**Office Hours:** Tuesday and Thursday 9:30 am - Noon; other times by appointment

**Additional Help:** New Holland Building 431

## REQUIRED MATERIALS:

- MyStatLab Access Code (go to the Bookstore for best price). The textbook: *Elementary Statistics: Picturing the World* (5<sup>th</sup> edition) by Larson and Farber is available electronically within your MyStatLab account. See accompanying handout for details.
- A scientific calculator is required and a graphing calculator will be helpful. A TI-83 or TI-84 is recommended.

## COURSE PREREQUISITES:

One of the following requirements must have been met within the past two years:

- Passed Math 1010 with a “C” or better.
- Earned ACT math score of 23 or higher.
- Earned a suitable CPT score.

## COURSE DESCRIPTION

Math 1040 is an introduction to the basic concepts and methods used in statistical data analysis. Course topics include descriptive statistics, sampling methods, and inferential statistics. The course emphasizes problem solving and critical thinking. Furthermore, Math 1040 is a lecture course with online homework, and tests—including a **comprehensive final exam**. The basic principles learned in Math 1040 can greatly benefit anyone and everyone, regardless of which future career a person chooses.

## COURSE OBJECTIVES

All classes in mathematics at Dixie State College of Utah support the general education goals of the college. Each mathematics class will:

- Require students to perform mathematical processes including fractions, percentages, decimals, proportions/ratios, algebraic equations, and/or calculus techniques
- Provide students with application problems that use a variety of methods including arithmetical, algebraic, and geometric methods
- Challenge students to make inferences from mathematical models that include formulas, graphs, and tables
- Provide students with real-life applications that use a variety of mathematical functions

Upon successful completion of Math 1040, a student will demonstrate the ability to:

- Compute and interpret descriptive statistics, including mean, median, mode, standard deviation, and interquartile range
- Employ and interpret graphical representations of data
- Construct confidence intervals for population parameters of interest
- Determine the sample size required to satisfy a predetermined goal
- Test null hypotheses related to the mean, the proportion, or the variance of a sample
- Test null hypotheses related to the difference in mean or the difference in proportion between two samples
- Interpret the results of null hypothesis tests, including the role of the significance level  $\alpha$
- Interpret bivariate correlations and linear regression models
- Apply various other statistical tests, including goodness-of-fit tests, independence tests

## COURSE WORK

- **Online Homework:** Homework will be completed online using MyStatLab. Due dates are listed in the online software. Your lowest FOUR HW scores will be dropped.
- **Online Quizzes:** Quizzes will be given using MyStatLab as well. Due dates are listed in the online software. Your lowest TWO quiz scores will be dropped.
- **Exams:** There will be 4 exams and a comprehensive final exam. Each student is expected to take the examinations as scheduled in the syllabus. Make-up exams will be given at the discretion of the instructor, and only if prior arrangements have been made. No exam grade will be dropped. **Because the final exam is comprehensive, your lowest exam score can be replaced with the percentage of the final exam.**
- **Grading:** Grades will be based on **Exams 70%, Homework 20%, and Quizzes 10%**. Letter grades will be assigned as follows:  
A (94-100%), A- (90-93%), B+ (87-89%), B (83-86%), B- (80-82%), C+ (75-79%), C (70-74%), C- (65-69%), D+ (60-64%), D (55-59%), D- (50-54%), F (0-49%)
- **Attendance:** Attendance is essential but will not be counted into your grade. You are responsible for all announcements and materials presented in the class.

## DISABILITY RESOURCE CENTER

Students with medical, psychological, learning or other disabilities desiring reasonable academic adjustment, accommodations, or auxiliary aids to be successful in this class will need to contact the DISABILITY RESOURCE CENTER (DRC) Coordinator ( Baako Wahabu) for eligibility determination. Proper documentation of impairment is required in order to receive services or accommodations. DRC is located at the ground floor of the Financial Aid Office. Visit or call 652-7516 to schedule appointment to discuss the process. DRC Coordinator determines eligibility for and authorizes the provision of services.

## Policy for Absences Related to College Functions

**Please refer to college student policy 5.23 Attendance.**

<http://www.dixie.edu/humanres/polstu.html>

### Important dates/deadlines

<http://www.dixie.edu/reg/calendar.html>

### Resources

Library - <http://library.dixie.edu>

Writing Center - [http://new.dixie.edu/english/dsc\\_writing\\_center.php](http://new.dixie.edu/english/dsc_writing_center.php)

Testing Center - <http://new.dixie.edu/testing>

Tutoring Center - <http://new.dixie.edu/tutoring/>

# MATH 1040 - Introduction to Statistics – Fall 2013

Section 04 MWF, 10:00–10:50 am, NIB 107, CRN: 44454/47297

Section 05 MWF, 11:00–11:50 am, NIB 150, CRN: 45304

## CLASS SCHEDULE

Date	Section	Date	Section
Aug 19	Course Intro/1.1/1.2	Oct 14	5.4 Sampling Distributions and the Central Limit Theorem
21	1.3 Data Collection and Experimental Design	16	6.1 Confidence Intervals for the Mean – Large Samples
23	2.1 Frequency Distributions	18	6.2 Confidence Intervals for the Mean – Small Samples
Aug 26	2.2 Graphs of Data	Oct 21	6.3 Confidence Intervals for Proportions
28	2.3 Measures of Central Tendency	23	6.4 Confidence Intervals for Variance and Standard Deviation
30	2.4 Measures of Variation	25	Review
<b>Sept 2</b>	<b>LABOR DAY – NO SCHOOL</b>	<b>Oct 28</b>	<b>Test #3 Chapters 5 &amp; 6</b>
4	2.5 Measures of Position	30	7.1 Intro to Hypothesis Testing 7.2 Hypothesis Testing for the Mean (Large Samples)
6	9.1 Correlation (Linear Regression)	Nov 1	7.3 Hypothesis Testing for the Mean (Small Samples)
Sept 9	9.2 Linear Regression	Nov 4	7.4 Hypothesis Testing for Proportion
11	Review	6	7.5 Hypothesis Testing for Variance and Standard Deviation
<b>Fri 13!</b>	<b>Test #1 Chapters 1, 2, 9.1, 9.2</b>	8	8.1 Testing for Difference in Mean (Large Samples)
Sept 16	3.1 Probability and Counting	Nov 11	8.2 Testing for Difference in Mean (Small Samples)
18	3.2 Conditional Probability and the Multiplicative Rule	13	8.3 Testing for Difference in Mean (Dependent Data)
20	3.3 The Additive Rule	15	8.4 Testing for Difference in Proportion
Sept 23	3.4 More Probability and Counting	Nov 18	Review
25	4.1 Probability Distributions	<b>20</b>	<b>Test #4 Chapters 7 and 8</b>
27	4.2 Binomial Distributions	22	10.1 Goodness of Fit Test
Sept 30	Review	Nov 25	10.2 Independence
<b>Oct 2</b>	<b>Test #2 Chapters 3 and 4</b>	<b>Nov 27-29</b>	<b>Thanksgiving Break</b>
		Dec 2	10.3 Comparing Two Variances
4	5.1 Normal / Standardized Distributions	Dec 4	10.4 Analysis of Variance
Oct 7	5.2 Normal Distributions and Finding Probabilities	Dec 6	Review for Final Exam
9	5.3 Normal Distributions and Finding Values	<b>Wed Dec 11</b> Section 04	<b>FINAL EXAM 9:30am – 11:30am</b>
<b>Oct 10,11</b>	<b>Fall Semester Break</b>	<b>Friday Dec 13</b> Section 05	<b>FINAL EXAM 10am – Noon</b>