

MATH 1040—Introduction to Statistics

Spring Semester—3 credits

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Additional Help: NIB 202 *or* Browning Learning Resource Center

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Required Text: *Elementary Statistics: Picturing the World* (4th edition) by Larson and Farber. Plus, you need a TI 83/84 calculator.

Prerequisite: You need to meet at least one of the following minimum requirements. Moreover, this requirement 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. [For details on this test, go to <http://new.dixie.edu/math>, click on FAQs, then click on “Which math class should I take?”.]

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 homework assignments, lab assignments, and tests—including a non-comprehensive final exam. Importantly, 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 α
- Interpret bivariate correlations and linear regression models
- Apply various other statistical tests, including goodness-of-fit tests, independence tests, and ANOVA

Homework and Quizzes

The goal of your doing homework should be to gain understanding of statistics—above and beyond rote memorization and superficial knowledge of formulas and “facts.”

1. Please read a section from the textbook before attending the scheduled lecture about that particular section. After actively participating in the classroom discussion on the section, you will then complete (as homework) all assigned exercises from that section.
2. When completing homework, working together is ok—in fact, I encourage it. However, copying another person’s work is not ok. Furthermore, you should try your very best to do a problem before you look at the solutions manual for help.

Exam Policies

You should bring the following items to each exam, if it is at the Testing Center: (a) scantron (form no. 882-E); (b) #2 pencil (not mechanical); (c) photo ID; (d) graphing calculator; (e) one “cheat sheet” (8½ by 11 inches, front and back). **Important:** You should photocopy the cheat sheet before you take a midterm exam if you wish to have a permanent copy, because the Testing Center staff will not allow you to take it with you after you complete the exam (for test integrity purposes).

Most importantly, sharing test information is not ok, and if you’re caught, you’ll receive an “F” for the course.

Grading

Exams (100 pts. each) 500 points

There are 500 total points possible. Your grade will be determined according to the percentage of points you earn in this course.

> 94.0% A	≥ 90.0% A–	≥ 86.0% B+	≥ 82.0% B
≥ 79.0% B–	≥ 75.0% C+	≥ 70.0% C	≥ 67.0% C–
≥ 64.0% D+	≥ 60.0% D	< 60.0% F	

Disability Resource Center

If you are a student with a documented physical or mental impairment that will substantially limit a major life activity, please contact the Disability Resource Center (DRC) on the main campus. The Center Coordinator and staff will assist you in evaluating your eligibility for services. If you are deemed eligible, reasonable accommodations that are appropriate for your disability will be assigned. If you have any questions concerning this process, please contact the Center at (435) 652–7516 or go to the DRC on the ground floor of the Financial Aid Office.

Website Resources

Library	http://library.dixie.edu/
Writing Center	http://new.dixie.edu/english/dsc_writing_center.php
Testing Center	http://new.dixie.edu/testing/
Tutoring	http://dsc.dixie.edu/tutoring/index.htm
Career Center	http://new.dixie.edu/career/

Lecture Schedule

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<u>DATE</u>	<u>LECTURE</u>	<u>DATE</u>	<u>LECTURE</u>
1/19	Overview 1.1 & 1.2	3/7 3/9	Review (<u>Test 3</u>) 6.1 & 6.2
1/12	1.3	3/14	Spring Break
1/17	Holiday	3/21	6.3 & 7.1
1/19	2.1	3/23	7.1 & 7.2
1/24	2.2 & 2.3	3/28	Review (<u>Test 4</u>)
1/26	2.4 & 2.5	3/30	7.3 & 7.4
1/31	Review (<u>Test 1</u>)	4/4	8.1 & 8.2
2/2	3.1 & 3.2	4/6	8.3 & 8.4
2/7	3.3 & 3.4	4/11	Review (<u>Test 5</u>)
2/9	4.1 & 4.2	4/13	9.1 & 9.2
2/14	4.3	4/18	10.1 & 10.2
2/16	Review (<u>Test 2</u>)	4/20	10.4
2/21	Holiday	4/25	Review (Test 6)
2/.23	5.1 & 5.2	4/27	Test 6
2/28	5.3 & 5.4		
3/2	5.5		

Important dates on the academic calendar for this semester can be found online at

<http://dixie.edu/reg/?page=Spring2011>

Homework Assignments

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1.1: 1–10, 11–37 odd

1.2: 1–6, 7–23 odd

1.3: 1–10, 11–29 odd, 30, 31, 33

2.1: 1–8, 9–31 odd

2.2: 1–8, 9, 11, 13–17 all, 23, 27, 30

2.3: 1–16, 17–33 e.o.o., 35–40, 41–49 e.o.o.

2.4: 1–6, 7–13 odd, 17–25 odd, 29–33 odd

2.5: 1, 3, 5, 7–10, 11–27 e.o.o., 29–33 odd

3.1: 1–4, 5–15 odd, 17–24, 25–33 e.o.o., 41(a & c), 43, 45, 49

3.2: 1, 3, 4, 5–11 odd, 13–29 e.o.o., 36(not d)

3.3: 3–8, 9, 11, 13–25 e.o.o.

3.4: 3–6, 7–13 odd, 15–18, 19–25 odd, 28, 37–49 e.o.o., 51(a)

4.1: 1, 5–8, 9–21 odd, 29–45 e.o.o.

4.2: 7–13 odd, 15, 19, 23, 28(not e)

4.3: 1–9 odd, 11–16, 17–23 odd

5.1: 2, 3, 4, 15–39 e.o.o., 47–59 e.o.o.

5.2: 1–29 e.o.o.

5.3: 1–45 e.o.o.

5.4: 1, 3, 5–8, 9–37 e.o.o.

5.5: 1–7 odd, 9–16, 19, 23

6.1: 1–4, 23–39 e.o.o., 51–63 e.o.o.

6.2: 9–21 e.o.o., 23, 27

6.3: 1, 2, 3–23 e.o.o., 27(a)

7.1: 1–8, 9, 11, 13, 19, 21, 23, 25–45 e.o.o.

7.2: 1, 3, 5, 13–19 odd, 25, 27, 29, 33(not b), 37(not b), 39*, 43*

* Follow directions for problems 33 & 37 instead of those given on p. 392.

7.3: 2, 19, 20, 23–31(a, d, & e) e.o.o.

7.4: 2, 3, 5, 7, 9–13(a, d, & e) odd

8.1: 5–11 odd, 17, 18, 21–29(a, d, & e) e.o.o.

8.2: 2, 15–23(a, d, & e) e.o.o.

8.3: 1, 2, 3, 5, 9–17(a, e, & f) e.o.o.

8.4: 2, 3, 5, 7–15(a, d, & e) e.o.o.

9.1: 1–8, 13, 14, 15–27 e.o.o.

9.2: 1–12, 15, 17, 19

10.1: 2, 7(a & d), 11(a & d), 17(a & d)

10.2: 13–21(a & d) e.o.o.

10.4: 1, 2, 5–13(a & d) e.o.o.

Remember!

The final exam will be administered in NIB 135 at 8:00 am on Thursday, December 16th.