

Math 1040-01 (#30492)
Introduction to Statistics (3)
Summer 2015 (Monday, 1 June – Thursday, 23 July 2015)
TWH 1:00-2:50 PM SNOW 150

Instructor: Dr. Brent D. Albrecht
Office: SNOW 137
Office Hours: M 4:00-4:50 PM
 & By Appointment
E-mail: balbrecht@dixie.edu
Phone: (435) 652-7765 (Office)

Prerequisites: Math 1000 or Math 1010 Grade of C or Higher, ACT Math Score of 23 or Higher, or Placement Test.

Course Description: Fulfills General Education Mathematics requirement for students majoring in Communications, Social & Behavioral Sciences, Fine Arts, and Liberal Arts. Introduces the basic concepts and methods used in statistical data analysis. Covers descriptive statistics, sampling, and inferential methods, while simultaneously emphasizing problem-solving and critical thinking skills. Includes the use of technology to perform statistical calculations, organize and analyze data, and construct graphs. Required for Utah Level 2 Math Endorsement. Satisfies the Mathematics prerequisite for Psy 3000.

Objectives: To convey to the students the beauty and utility of mathematics, and to illustrate some of its applications in modern society.

To convey, to the extent possible using the content of this course, the quantitative literacy skill set adopted by Dixie State University:

All mathematics courses at Dixie State University support the general education goal of the university, and will require students to:

1. Employ mathematical techniques in solving computational problems.
2. Interpret mathematical models.
3. Construct quantitative and logical arguments.
4. Apply mathematical knowledge to solve real-world problems.
5. Communicate in the mathematical language through the proper use of notation and terminology.
6. Explore and analyze mathematical concepts, using technology to the appropriate extent.

Upon successful completion of this course, the students will demonstrate through testing the ability to:

1. Compute and interpret descriptive statistics, including the mean, the median, the mode, the standard deviation, and the inter-quartile range.
2. Employ and interpret graphical representations of data.
3. Construct confidence intervals for population parameters.
4. Determine lower-bounds on the sample sizes required to reduce margins of error to values below pre-assigned limits and/or satisfy other prescribed goals.
5. Test null hypotheses regarding the mean, the proportion, and the variance of a single sample, as well as the difference, both in mean and in proportion, between two samples.
6. Interpret the results of hypothesis tests with reference to the level of significance α .
7. Describe both the strength and the direction of the correlation of bivariate data.
8. Perform linear regression analysis on multivariate data sets.
9. Apply other statistical tests, including χ^2 goodness-of-fit tests and tests for the independence of random variables.

“Philosophy is written in this grand book – the Universe – which stands continually open to our gaze, but it cannot be understood unless one first learns to comprehend the language and interpret the characters in which it is written. It is written in the language of mathematics, and its characters are triangles, circles, and other geometrical figures, without which it is humanly impossible to understand a single word of it.”

- Galileo Galilei

Text: Statistics: Informed Decisions Using Data, 4th Ed. by Michael Sullivan, III.

Attendance: It is essential that students attend class, and roll is taken on randomly selected days in order to ensure student attendance. Tardiness is strongly discouraged. Attendance records may be used in determining borderline grades. Absences due to university-sponsored activities are handled as stated in Dixie State University Policy #5-23 (located at <http://www.dixie.edu/humanres/policy/sec5/523.html>).

Homework: Although this section is taught in a traditional lecture format, it also includes an extensive computer-based component. In particular, all homework assignments are to be completed online through Pearson’s MyStatLab (located at <http://www.mystatlab.com/>). Some homework exercises require students to use StatCrunch (an online data analysis tool located at <http://www.statcrunch.com/>). Students must purchase access to the MyStatLab educational environment (which includes access to an electronic version of the required course text) and must also have access to a computer with an internet connection on a daily basis. Access codes for Pearson’s MyStatLab are available for purchase at the Dixie State University Bookstore (located on the second floor of the Gardner Center). Computer facilities designated for student use are available throughout campus. The course identification number is **albrecht78076**. If desired, students may also purchase a loose-leaf version of the text by visiting Pearson’s online store at

<http://www.mypearsonstore.com/bookstore/statistics-informed-decisions-using-data-books-a-la-0321759117>.

Exams: All exams (including the final exam) are administered in the Dixie State University Testing Center (located in the North Plaza Building) via the use of Pearson's MyStatLab (located at <http://www.mystatlab.com/>). There will be four midterm exams and one (incomprehensive) final exam. Students are required to achieve a score of 75% or higher on all of the homework sets associated to any given exam prior to taking that exam. (Students who fail to achieve a score of 75% or higher on all of the homework sets associated to a particular exam will receive no credit for that exam.) Exams are administered according to the following (tentative) schedule:

- Midterm I: 9:00 AM-9:00 PM on Wednesday, 10 June 2015
- Midterm II: 9:00 AM-4:00 PM on Tuesday, 23 June 2015
- Midterm III: 9:00 AM-4:00 PM on Thursday, 2 July 2015
- Midterm IV: 9:00 AM-9:00 PM on Wednesday, 15 July 2015
- Final: 9:00 AM-4:00 PM on Thursday, 23 July 2015

Make-up exams are given only in extenuating circumstances, and only if prior arrangements are made. The instructor reserves the right to make evaluations on a case-by-case basis.

Calculators: Students are required to have access to either a TI-83 or TI-84 Plus Graphing Calculator. Students may use these calculators when completing homework assignments and exams.

Grading:	Homework	25%	94 – 100%	A
	Midterm I	15%	90 – 93%	A-
	Midterm II	15%	87 – 89%	B+
	Midterm III	15%	83 – 86%	B
	Midterm IV	15%	80 – 82%	B-
	Final	15%	75 – 79%	C+
			70 – 74%	C
			65 – 69%	C-
			60 – 64%	D+
			55 – 59%	D
			50 – 54%	D-
			0 – 49%	F

Academic Integrity: Students are expected to uphold the highest standards of academic integrity. Section 4, Article XI of Dixie State University Policy #5-33 (located at <http://www.dixie.edu/humanres/policy/sec5/533.html>) outlines the standards of student academic conduct. While students are encouraged to collaborate on homework assignments, their submitted work should accurately reflect the results of their individual efforts. Students must do their own work during exams. Talking, having discussions, comparing papers, copying, and collaborating are not allowed on exams. The use of notes, unapproved calculators, and communication devices such as cell

phones is also prohibited during exams. Academic dishonesty will result in the failure of written work and may lead to failure of the course and/or university disciplinary action.

Classroom Etiquette: Students are responsible for helping to maintain a respectful classroom learning environment. Academic discipline for instances of disruptive behavior are handled as stated in Dixie State University Policy #5-33 (located at <http://www.dixie.edu/humanres/policy/sec5/533.html>).

Accommodations: Any student seeking accommodations or services due to a disability must contact the Disability Resource Center (located in the North Plaza Building). Students may call the center at (435) 652-7516 or send an email to drc@dixie.edu. The Disability Resource Center determines eligibility for and authorizes the provision of accommodations and services. The center can arrange to provide materials (including this syllabus) in alternate formats if necessary.

Dmail: Important class and university information is sent to students' Dmail accounts. All Dixie State University students are automatically assigned a Dmail account. Students are responsible for knowing the information sent to their Dmail accounts.

Class Schedule: The Dixie State University Summer 2015 Semester Schedule is located online at <http://new.dixie.edu/reg/?page=summer2015>. The (tentative) schedule for the class is as follows:

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
June 1	2	3	4	5
	1.1	2.1-2.2	3.1-3.3	
8	9	10	11	12
	3.4-3.5	Review & Midterm I	4.1-4.2	
15	16	17	18	19
	5.1	5.2	5.3	
22	23	24	25	26
	Review & Midterm II	6.1-6.2	7.1-7.2	

29	30	July 1	2	3
	8.1	8.2	Review & Midterm III	<i>Independence Day No Class</i>
6	7	8	9	10
	9.1-9.3	10.1-10.2	10.3	
13	14	15	16	17
	10.5	Review & Midterm IV	11.1-11.3	
20	21	22	23	24
	12.1-12.2	13.1 & Final Review	Final Exam 9:00 AM – 4:00 PM	<i>Pioneer Day No Class</i>