Course Information Sheet

Course: Math 115-03 - General Education Statistics - 3 Credit/Contact Hours - Fall 2014
IAI Code: M1 902
Delivery Mode: Face-to-face
Meeting Time: TTh 1:30pm-2:45pm
Meeting Place: Room 2625

Instructor: Steve Kifowit, Rm 2305, Ph. (708) 709-3954
Email: skifowit@prairiestate.edu
Web: http://stevekifowit.com
Office Hours: MW 9am-10am & 1pm-1:30pm, TTh 11am-12pm, or by appointment

Text: *Elementary Statistics: Picturing the World*, 6th edition (2015); Larson & Farber

Course Description: The general education statistics course provides students with an opportunity to acquire a reasonable level of statistical literacy and thus expand their base for understanding a variety of work-related, societal, and personal problems, and statistical approaches to solutions of these problems. The main objective of the course is the development of statistical reasoning. Detailed techniques of statistical analysis and the mathematical development of statistical procedures are not emphasized. The course is intended to meet the general education requirement. It is not intended to be a prerequisite to, nor a replacement for courses in statistical methods for business, social science or mathematical statistics. Students who complete this course cannot also receive credit for BUS 240 or MATH 153.

Course Prerequisite: Math 095 (Intermediate Algebra) and Math 096 (Geometry) with C's or better, or equivalents.

Course Goals/Objectives:
General Education Objectives---The mathematics component of general education focuses on quantitative reasoning to provide a base for developing a quantitatively literate college graduate. Every college graduate should be able to apply simple mathematical methods to the solution of real-world problems. A quantitatively literate college graduate should be able to:
a.) interpret mathematical models such as formulas, graphs, tables and schematics, and draw inferences from them;
b.) represent mathematical information symbolically, visually, numerically and verbally;
c.) use arithmetic, algebraic, geometric and statistical methods to solve problems;
d.) estimate and check answers to mathematical problems in order to determine reasonableness, identify alternatives and select optimal results; and
e.) recognize the limitations of mathematical and statistical models.

Specific Course Objectives---In addition to meeting the general education objectives, every successful Math 115 student should be able to:
1.) Define the common descriptive statistics/parameters and state their properties, relationships, and uses.
2.) Describe the features of data distribution (including shape, center, spread, as well as the underlying variable and observation unit) and construct appropriate graphical representations to illustrate the important features.
3.) Describe ways to gather data through various methods of sampling, designs for experiments, or probability simulations.
4.) Interpret statistics/parameters, the features of a data distribution, and the methods of data collection, in the context of the situation from which the data was gathered.
5.) Explain probability as a long term relative frequency, determine the probability of an event using empirical and/or theoretical probability, and interpret the likelihood of the occurrence of the event (likely, rare, unlikely, etc.)
6.) Determine probabilities of events using the standard rules of probability (addition rule, conditional probability, etc.).
7.) State the Central Limit Theorems for proportions and means, and use them to calculate the probabilities of events from sampling distributions.
8.) Use inference procedures to construct confidence intervals and perform hypothesis tests, and explain their properties and relationships.
9.) Compare/contrast variables and their distributions, and calculate and interpret correlation between variables.

Attendance Policy: Regular class attendance is an essential component of successful learning. Students are responsible for prompt attendance and participation in all class meetings. If you miss class, you will not be allowed to make up any tests, quizzes, or assignments that you may have missed. All material covered in class is the student's responsibility.

Grading: Your grade will be based on your performance on three 50-point tests, a 75-point final exam, approximately ten

5-point quizzes, and miscellaneous problems and projects (0-30 points). Very roughly, tests count for about 55% of your grade, the final exam counts for about 27%, and quizzes count for about 18%. The grading scale is as follows:

A --- 88% and above
B --- 77% - 87%
C --- 66% - 76%
D --- 55% - 65%
F --- below 55%

You may estimate your current grade at any time during the semester by computing the following percentage: 100% * (Total points accumulated) / (Total points possible). Please feel free to discuss your grade with me at any time during the semester. Throughout the semester, grades will be posted online at http://www.engrade.com/skifowit.

Homework: Homework problems will be assigned on a daily basis. Your work will not normally be collected, but we will often discuss homework problems in class. If any suggested homework problems are to be submitted for grading, you will be given advance notice of at least one class period. Keep up to date on your homework! Homework problems will often show up on quizzes and tests.

Quizzes: Be prepared for an in-class, 5-point quiz on each Thursday, unless a test is scheduled. No make-up quizzes will be given. Your lowest quiz score will be dropped at the end of the semester.

Tests/Exams: Test problems will be similar to class examples, quiz problems, and homework problems. In addition to computational problems, tests may include multiple choice, true/false, short answer, and/or writing problems. You must show all work on all tests to receive full credit. **You must work individually on all tests.** No make-up tests will be given. At the end of the semester, your lowest test score will be replaced by two-thirds of your final exam score (if this helps you).

Final Exam: The final exam is comprehensive and will be worth 75 points toward your final grade. The final exam counts for more than 25% of your grade. Please take it seriously! See the lecture pace for the date of the final exam.

Calculators: The TI-83/84 Graphing Calculator is required for this course. We will also make use of computer software such as Microsoft Excel.

Disability Statement: Any student needing to arrange reasonable accommodations for a documented disability (learning, physical, psychological, or other) should contact the Disability Services Office (Room 1192).

Religious Observance Accommodation: Prairie State College is required to excuse students who need to be absent from class, examinations, study, or work requirements because of their religious beliefs, and provide students with a make-up opportunity, unless to do so would unreasonably burden the institution. Students must notify their instructor well in advance of any absense for religious reasons. If you require special accommodations for observance of a religious holiday, please notify me during the first week of the term.

Misc. information:
1.) The last day to withdraw from the course is November 7. For refund information, refer to the fall schedule book. If you wish to withdraw from the course, it is your responsibility to do so. Any student who does not come to class, yet fails to withdraw, will be given an F.
2.) You are expected to spend roughly 9 hours per week on coursework - 3 hours in class and 6 hours out of class. If you cannot make this commitment, you may want to reconsider taking this course.
3.) The grading scale will be strictly adhered to! Final percentages will be rounded to the nearest whole number.
4.) This is a fast-paced course! We will cover much material in little time. You are responsible for thoroughly reading the textbook and keeping up with the assigned material.

Course information, including tests, quizzes, and answer keys, can be found at http://stevekifowit.com/classes/m115.htm

Lecture Pace

Math 115-03 - Probability & Statistics

Week 1	Aug 19 & Aug 21	Course information; Chapter 1	Statistical thinking, Types of data, Collecting data
Week 2	Aug 26 & Aug 28	Sections 2.1, 2.2, 2.3	Frequency distributions, Statistical graphs, Central tendency
Week 3	Sep 2 & Sep 4	Sections 2.4, 2.5, 3.1	Variation, Relative position, Probability
Week 4	Sep 9 & Sep 11	Sections 3.2, 3.3, 4.1	Probability basics, Probability distributions
Week 5	Sep 16 & Sep 18	Review, **Test 1**	
Week 6	Sep 23 & Sep 25	Section 4.2, 4.3, 5.1	Binomial distribution, Poisson distribution, Intro to normal
Week 7	Sep 30 & Oct 2	Sections 5.2, 5.3	Normal distributions
Week 8	Oct 7 & Oct 9	Sections 5.4, 6.1, 6.2	Sampling distributions, Central Limit Theorem, Confidence intervals
Week 9	Oct 14 & Oct 16	Review, **Test 2**	
Week 10	Oct 21 & Oct 23	Sections 6.3, 6.4	Confidence intervals
Week 11	Oct 28 & Oct 30	Sections 7.1, 7.2	Intro to hypothesis testing
Week 12	Nov 4 & Nov 6	Sections 7.3, 7.4	Hypothesis testing
Week 13	Nov 11 & Nov 13	Review, **Test 3**	
Week 14	Nov 18 & Nov 20	Sections 9.1, 9.2, 9.3	Correlation, Linear regression
Week 15	Nov 25	Sections 8.1, 8.2, 8.3, 8.4	Hypothesis testing with two samples
Week 16	Dec 2 & Dec 4	Review/Catch-up	
*******	Thursday, Dec 11	**Final Exam** --- 1pm-2:50pm	

***** November 7 is the last day to withdraw *****