

MA155 – Statistical Reasoning (Spring 2017) TR Schedule

Instructor: Office: Phone:

Office Hours:

Website: learning.semo.edu, then look for MA155 under My Courses

MyLabPlus: <http://semo.mylabsplus.com>

Email:

Prerequisites: ACT Math subscore of 15 or higher or MA050 with a grade of 'NDC' or higher or MA 102 with a grade of 'C' or higher or a required score on an appropriate COMPASS placement test. Students with an ACT Math subscore below 22 will co-enroll in MA055.

Textbook: There is no paper textbook. You access your eBook online-MyLabsPlus (Sullivan III, M. (2013): Statistics: Informed Decisions Using Data (4th Edition), Pearson Publishing).

Pearson eText: The Pearson eText app for Android tablets/Ipad is a great companion to Pearson's eText browser-based book reader. For more details: <http://www.pearsonhighered.com/etextmobile/>

Catalog Description: This course will introduce statistical ideas to students. The student will reach an understanding of these statistical ideas, be able to deal critically with statistical arguments, and gain an understanding of the impact of statistical ideas on public policy and in other areas of academic study. (3 credit hours)

Purposes or Objectives of the Course:

- The student will develop the ability to identify and analyze the various representations and misrepresentations of statistical data. (University Studies Objectives: 2, 6).
- The student will collect data from a variety of sources, and analyze its validity and effect on society. (University Studies Objectives: 1, 2, 4, 5, 6, 7, 8).
- The student will present statistical data, and give reasons for accepting or not accepting the conclusions drawn from it. (University Studies Objectives: 2, 3, 7, 9).
- The student will gain an appreciation for the complexity of statistical analysis, and how statistical ideas and reasoning ideas are used in public policy and the human sciences, from sociology to medicine. (University Studies Objectives: 2, 4, 8, 9).

Student Learning Outcomes:

- Students will be able to interpret graphs and tables, and graphically and numerically summarize data obtained from a primary source. (University Studies Objectives 1, 2, 3)
- Students will be able to construct and interpret confidence interval for population mean and population proportion. (University Studies Objective 2)
- Students will be able to interpret linear associations between two quantitative variables using the correlation coefficient and the linear regression line to predict one variable by another. (University Studies Objectives 2, 4, 9)

Grading Information:

- Grades will be determined as follows:

MyLabPlus homework, quizzes and other assignments.....	15%
Work for MyLabPlus quizzes brought to class.....	5%
Exams.....	50%
Projects.....	10%
Final Exam.....	20%
- MyLabPlus Homework may be completed past the due date for 70% credit. A 30 % penalty will be deducted only on those exercises scored after the due date.
- No make-up MyLabsPlus Quizzes will be given. At the end of the semester the 4 lowest quizzes will be dropped.
- The deadline to complete any work in MyLabsPlus is _____.
- MyLabsPlus quizzes are taken at home with all work shown on a separate sheet of paper. You will bring the work for the quizzes to class on the due date for credit. You must be in class for the entire period to receive credit for the quiz work.
- There will be 4 tests. See next page for tentative schedule of exams. Insert your late policy.
- Projects will involve analyzing real data using the concepts for the class.
- The final exam is on _____. The final exam is a required component of the class. Failure to take the final will result in an "X", which is calculated into your GPA the same as an "F".
- At the end of the semester, grades will be determined by: 90-100 A, 80-89 B, 70-79 C, 60-69 D, 0-59 F

Internet Browser: MyLabPlus works best with Chrome or Firefox. If you have a Mac, it works well using Chrome.

Statistical Software: STATCRUNCH will be used extensively. It is part of your MyLabsPlus subscription.

Course Materials and Supplies: Students are required to have a subscription to MyLabPlus course and calculator. **Notebook is strongly suggested, but not required.** In the ideal notebook, book reading notes, classroom notes and worked examples are shown in neat orderly manner. The goals of a notebook are to:

- i. Develop the habit of communicating mathematics effectively.
- ii. Help with study and review for test preparation

Academic Honesty: See your bulletin for a description of the Academic Honesty policy. Cheating on a test or assignment will result in a zero for that activity, and may result in disciplinary action by the University. Students are encouraged to work together to study and do problems for this course, but it is expected that each student turn in work that represents his/her own efforts. During a test no homework or notes should be visible.

Tentative Schedule: Maybe be adjusted.

Week	Tuesday Date	Tuesday	Thursday
1	Jan. 17	In Class: Enroll in MyLabsPlus, Syllabus, Class Introduction, Take Stat Crunch survey 1.1 Introduction to Practice of Statistics	1.2 Observational Studies versus Designed Experiments Friday Jan. 20 Last day to add full semester class
2	Jan. 24	1.3 Simple Random Sampling 1.4 Other Effective Sampling Methods	1.4 Other Effective Sampling Methods 1.5 Bias in Sampling
3	Jan. 31	1.6 The Design of Experiments	2.1 Organizing Qualitative Data 2.2 Organizing Quantitative Data: The Popular Displays
4	Feb. 7	2.3 Time Series only 2.4 Graphical Misrepresentations of Data	Exam 1: Chapters 1 and 2 Sat. Feb. 11 Last day to drop full semester class with partial refund
5	Feb. 14	3.1 Measures of Central Tendency 3.2 Measures of Dispersion	3.2 Measures of Dispersion 3.4 Measures of Position and Outliers. Fri. Feb. 17 Last day to Audit or take as pass/fail a full semester class
6	Feb. 21	3.4 Measures of Position and Outliers. 3.5 The Five-Number Summary and Boxplots	4.1 Scatterplot and Correlation
7	Feb. 28	4.2 Regression	4.3 Coefficient of Determination
8	Mar. 7	4.4 Contingency Tables and Association Review	Exam 2: Chapters 3 and 4
9	Mar. 14	Spring Break—no class	
10	Mar. 21	5.1 Probability Rules 5.2 Addition Rule and Complements	5.2 Addition Rule and Complements 5.3 Independence and Multiplication Rule
11	Mar. 28	6.1 Discrete Random Variables	7.1 Properties of the Normal Distribution 7.2 Applications of the Normal
12	Apr. 4	Finish 7.2/Review	Exam 3: Chapters 5, 6, and 7
13	Apr. 11	8.1 Distributions of the Sample Mean Central Limit Theorem	9.1 Estimating a population Proportion Confidence Interval for Population Proportion
14	Apr. 18	9.2 Estimating a population Mean	10.1 The Language of Hypothesis Testing Homework: Study 10.2 text and notes Fri. Apr. 21 Last day to drop a full semester class or withdraw from university without failing grades
15	Apr. 25	10.2 hypothesis Tests for a Population Proportion	Exam 4: 8.1, 9.1, 9.2, 10.1
16	May 2	10.3 Hypothesis Tests for a Population Mean	Review for final exam
17	May 9	Final Exam Week	

Getting Help: If you need help, don't let yourself get behind.

- Come see your instructor
- Visit free tutors in the Math Learning Centers in Memorial Hall 104 and in Johnson Hall 112
- Sign up for a free tutor from the Student Support Services in the University Center, (573) 651-2512, <http://www.semo.edu/sss/>
- Get counseling for math anxiety, test anxiety, personal problems from the University Counseling Services (573) 986-6191. If you have a documented disability, please meet with your instructor to discuss accommodations. <http://www.semo.edu/ucs/> Follow the link for both Counseling and Disability Services

General Student Conduct: Professional behavior is expected in the classroom. Every student at Southeast is obligated at all times to assume responsibility for his/her actions, to respect constituted authority, to be truthful, and to respect the rights of others, as well as to respect private and public property. In their academic activities, students are expected maintain high standards of honesty and integrity and abide by the University's Policy on Academic Honesty. Alleged violations of the Code of Student Conduct are adjudicated in accordance with the established procedures of the judicial system.

Use your Southeast email account: Read your Southeast Email at least a few times a week.
When you email your instructor, put MA155 in the subject line and use your Southeast email account.

Portal Problems? If the portal is unavailable, you can still access the course website and your Southeast email.
Southeast email: <http://student.semo.edu>
Access all of your courses: <http://courses.semo.edu/login>

Weather Problems? The University rarely closes. Even if they stay open, your instructor understands that some commuters might be unable to attend. Listen to radio (i.e. 100.7 FM) or the TV stations for updates.

Questions? Questions, comments, or requests regarding this class should be directed to your instructor. Unanswered questions or unresolved issues involving this class may be taken to Dr. Tamela Randolph, Chairperson of the Department of Mathematics.