MAT 122 Probability and Statistics for the Liberal Arts II, Spring 2009
Sections 200 and 300

Course supervisor and instructor: Professor Vincent E. Fatica, 224 Carnegie, x3-1587, vefatica@syr.edu; office hours: to be announced

Mathematical Prerequisites: MAT 121 is a prerequisite for MAT 122. It is also desirable that students have a reasonable level of competence in high school algebra.

Credit Restrictions: A student cannot receive credit for MAT 122 after completing any MAT course numbered above 180 with a grade of C or better.

MAT 122 and the Liberal Arts Core: The sequence MAT 121 – MAT 122 can be used to satisfy the quantitative skills requirement of the liberal arts core in the College of Arts and Sciences.

Texts: Elementary Statistics by Mario F. Triola 10th edition and the accompanying Minitab Student Laboratory Manual and Workbook for the 10th edition.

Computer Labs: When you registered for this course you should have also registered for a recitation section that goes with it. These meet in 100 Carnegie or 115 Physics Bldg. (or perhaps another computer lab, check your schedule to be sure). There will be computer lab assignments to be done during these recitation times, which you must hand in to be graded. Please bring your textbook, laboratory manual, and calculator to these recitations.

Homework: Homework is for your practice. It will not be handed in; it will not be graded. Suggested homework problems are given later in the syllabus.

Exams: You should bring your calculator to exams. You may use the textbook during exams. Your textbook may be embellished with notes which are either written on or attached to the pages of the book. Attachments must be modest in size. You may also use the textbook's "Formula Card" or an 8-page copy of it (which may have note on the backs of the pages). No other materials will be allowed during exams.

Make-up Exams: No make-up exams will be given. At the discretion of the instructor, the final exam (or the pertinent parts thereof) will be count to replace a missing exam grade.

Calculator: Your calculator should be able to take square roots. A fairly sophisticated calculator is recommended. The TI-83 is particularly recommended and will be used by the instructor in class. Many of the formulas in MAT 122 are complicated; you should attempt to become proficient at using the calculator. The best way to do that is to bring your calculator to class and get into the habit of doing computations along with the instructor.

MAT 122 Probability and Statistics for the Liberal Arts II, Spring 2009

Calculation of Course Grade: There are six aspects to grading, four in-class exams, the computer labs, and the final exam. Once those six grades have been converted to percents, your "raw" score for the course will be computed by the formula: raw score = (.15)(test 1) + (.15)(test 2) + (.15)(test 3) + (.15)(test 4) + (.20)(final exam) + (.20)(lab average). The conversion to a letter grade will follow the guidelines below.

Raw score x	Grade	Raw score x	Grade
0<=x<60	F	80<=x<83	B-
60<=x<70	D	83<=x<86	B
70<=x<73	C-	86<=x<90	B+
73<=x<76	C	90<=x<93	A-
76<=x<80	C+	93<=x<=100	A

Final Exam: MAT 122 will be assigned a two-hour time slot during final exam period 12. This period is from 8:00am to 2:30pm on Monday, May 4, 2009. The exact time and location for the 2-hour final exam will be announced in lecture near the end of the term. <u>The final exam will not be given at any other time.</u> Therefore, do not make plans to leave campus before the end of period 12.
The final exam will be comprehensive; i.e., it will contain material from all parts of the course.

Students with documented disabilities: Students who may need special accommodations because of a certified disability should bring this to the attention of the instructor at the earliest opportunity; accommodations will not be made retroactively. Students who have special accommodations should see their instructor at least two days before each examination to confirm that arrangements/accommodations are in place. This is the student's responsibility.

Academic Integrity: The Syracuse University Academic Integrity Policy holds students accountable for the integrity of the work they submit. Students should be familiar with the Policy and know that it is their responsibility to learn about instructor and general academic expectations with regard to proper citation of sources in written work. The policy also governs the integrity of work submitted in exams and assignments as well as the veracity of signatures on attendance sheets and other verifications of participation in class activities. Serious sanctions can result from academic dishonesty of any sort. For more information and the complete policy, see http://academicintegrity.syr.edu.

Learning Outcomes: After successfully completing this course the student should understand what a hypothesis test is and know how to perform numerous different hypothesis tests both parametric and nonparametric. In many cases construction of related confidence intervals will also be learned. The student will also learn to judge which hypothesis test is appropriate for use in which sorts of problems. Also learned will be how to construct the best line through a given set of data points and the construction and interpretation of certain graphs that track a process over time.

MAT 122 Probability and Statistics for the Liberal Arts II, Spring 2009

Date		Sections
Jan.	13	8-1, 8-2
	15	8-2
	20	8-3, 8.4
	22	8-4, 8-5
	27	8-5,8-6
	29	Review
Feb.	3	Test 1
	5	9-1, 9-2
	10	9-3
	12	9-4
	17	9-5
	19	Review
	24	Test 2
	26	10-1, 10-2
Mar.	3	10-3
	5	10-4
	17	11-1, 11-2
	19	11-3
	24	12-1, 12-2
	26	Review
	31	Test 3
Apr.	2	14-2
	7	14-3
	9	selected topics from chapter 13
	14	selected topics from chapter 13
	16	Review
	21	May-fest, no class
	23	Test 4
	28	Review
May	4	Final exam (exam period 12)

Reminders: No make-up exams
No exceptions to the scheduled final exam date and time

MAT 122 Probability and Statistics for the Liberal Arts II, Spring 2009

Computer Labs

1. Cover the material in Section 8-1 Working with Summary Statistics and 8-2 Testing Hypothesis About p, pages 97-99.

2. Have students do exercises 8-1, 8-2, 8-3, 8-4, pages 107-108.

3. Cover the material in Sections 8-3 Testing Hypothesis About μ, 8-4 Testing Hypothesis About σ or σ^2, and 8-5 Testing Hypothesis with Simulations, pages 99-106.

4. Have students do exercises 8-5, 8-9, 8-15, 8-17, pages 108-112.

5. Cover the material in Chapter 9 Inferences from Two Samples, pages 116-124.

6. Have students do exercises 9-1, 9-2, 9-8, 9-17, 9-23, pages 125-133.

7. Cover the material in Sections 10-1 Scatterplot, 10-2 Correlation, 10-3 Regression, and 10-4 Predictions pages 135-139.

8. Have students do exercises 10-1, 10-2, 10-3, 10-4 pages 144-145.

9. Cover the material in Chapter 11 Multinomial Experiments and Contingency Tables pages 150-154.

10. Have students do exercises 11-1, 11-5, 11-10, pages 156-160.

11. Cover Chapter 12 Analysis of Variance pages 162-168. You can cover Two-Way even though it was not covered in class because computers make calculations easier.

12. Cover Chapter 14 Statistical Process Control, pages 196-202.

13. Find out from the instructor what sections in chapter 13, Non-parametric Statistics, will be covered; design an appropriate discussion and choose appropriate exercises.

A randomly ordered list of things TAs should know and/or do.

1. Give me a list of which main lectures you can be at to proctor exams, whether or not that main lecture corresponds to any of your labs. Tu-Th 8:00-9:20, 9:30-10:50, 12:30-1:50.

2. There are 13 labs. In every one students should hand in work to be graded. In some you lead students through what they should do, in others they do it more or less on their own, but they always hand it in. All 13 labs will be graded and count toward their grade. You will not drop any scores.

3. Grade labs. Most students average in the 90's.

4. Keep at least two copies of grades at least one of which is a hard copy. Try to keep at least one copy at school.

5. Allow two or more persons on one computer only when necessary. When people share a computer they may hand in either joint or separate assignments. Try to vary who gets to share.

6. All work handed in must be done in your presence.

7. Hold office hours in Carnegie 218, two per week at different times of day. Do not have office hours during main lecture. Allow make ups for reasonable sounding excuses, but don't allow too many make ups by same student. Tell class not to assume make ups will be allowed.

8. Faculty must turn in progress reports on students Mon. Feb 23, so get lab grades with averages to them by Thu. Feb 19 (morning).

9. You will help grade tests during the term and final exams. Try to keep time near tests as free as possible. Don't plan to leave for Summer break too soon.

10. Tell students that it is a good idea to check with you occasionally to see if their idea of what labs they have handed in and yours coincide.

11. Try to practice computer labs before class. Computers are quirky.

12. Teach students to save their work to their account. If the printer is not working or is very slow they may need to do this.

13. At various times during the term instructors get requests for progress reports on some students. When this happens your instructor will ask you for an update on those students' lab grades. Please respond promptly.

MAT 122 Probability and Statistics for the Liberal Arts II, Spring 2009

Suggested Homework Problems

You really, really should do all the problems in set (1). For extra practice you might also want to do those in set (2).

8-2	(1) 1, 3, 5, 9, 17, 19, 21, 29, 31, 33, 35, 37, 39
	(2) 7, 11, 13, 15, 23, 25, 27, 41, 45
8-3	(1) 1, 3, 5, 9, 15, 19 (2) 7, 11, 13, 17
8-4	(1) 1, 3, 5, 7, 9, 11
8-5	(1) 1, 3, 5, 7, 9, 13, 15 (2) 11, 17, 19, 25
8-6	(1) 1, 3, 5, 7 (2) 9, 11
9-2	(1) 13, 15, 19, 21, 23 (2) 1, 3, 5, 7, 9, 11, 17, 25, 27, 29
9-3	(1) 9, 11, 15, 17, 29, 31 (2) 1, 3, 5, 7, 13, 19, 21, 23, 25, 27
9-4	(1) 11, 13, 15, 17 (2) 1, 3, 5, 7, 9, 19, 21, 23
9-5	(1) 9, 11, 13, `15 (2) 1, 3, 5, 7, 17, 19
10-2	(1) 1, 3, 5, 9, 11, 25, 27 (2) 7, 13
10-3	(1) 1, 3, 5, 9, 11, 25 (2) 7, 13
10-4	(1) 1, 3, 9, 13, 17 (2) 11, 15, 19
11-2	(1) 1, 3, 7, 11 (2) 5, 9, 13, 15, 17, 19
11-3	(1) 3, 5, 9 (2) 7, 11, 13, 15, 17, 19
12-2	(1) 5, 7, 9 (2) 1, 3
14-2	(1) 1, 3, 5, 7, 9
14-3	(1) 1, 3, 5
*13-2	(1) 1, 3, 5, 7, 9 (2) 11, 13
*13-3	(1) 1, 3, 5 (2) 7
*13-4	(1) 1, 3, 5 (2) 7, 9
*13-5	(1) 3, 5 (2) 7
*13-6	(1) 1, 3, 5 (2) 7, 9, 11
*13-7	(1) 1, 3, 5, 7, 11 (2) 9, 13, 15

* Only selected sections from chapter 13 will be covered.