MAT 122 Probability and Statistics for the Liberal Arts II

Instructor: Professor Steven P. Diaz, 317C Carnegie, x1583, spdiaz@syr.edu, office hours Tu 11:15-12:00, W 2:00-3:00, Th 2:15-3:00.

Course Supervisor: Professor Steven P. Diaz, 317C Carnegie, x1583. Problems you cannot resolve with your instructor should be brought to the attention of the course supervisor.

Mathematical Prerequisites and Restrictions: MAT 121 is a prerequisite for MAT 122. 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 with Finite Mathematics, Fifth Custom Edition for Syracuse University, Math 121 & 122, and the Minitab Manual that goes with the 13th edition of Elementary Statistics by Mario F. Triola.

Recitations: When you registered for this course you should have also registered for a recitation section that goes with it. There will be computer lab assignments or other work to be done during these recitation times, which you must hand in to be graded. All recitations count toward your grade. Attendance at all recitations is required. Please bring your textbook, laboratory manual, and calculator to these recitations. Your recitation TA should inform you of his/her policy on making up missed recitations. Make sure you are familiar with that policy. However, no recitation make up work may be handed in later than Thursday, May 3, 2018, noon. It is a good idea to occasionally check with your TA to make sure the two of you have the same record of what your lab grades are.

Homework: Homework is for your practice. It will not be handed in; it will not be graded. Page 5 of the syllabus contains suggested problems for each section. It is also a good idea to try the statistical literacy and critical thinking, chapter quick quiz, and review exercises at the end of each chapter.

Exams: All exams (including the final exam) are open book. Students may use their textbooks as well as any other books or notes they wish. Students may use any type of calculator they wish except that they may not use calculators capable of wireless communication. Cell phones or any other device capable of wireless communication are not allowed. Student ID's will be checked during the exams. Any questions about the grading of the four exams during the term must be brought to the instructor before the day of the final exam.

Make-up Exams: Makeups for exams will only be given as required by the University Religious Holliday policy and perhaps a few other very special circumstances. Do not assume you know what constitutes a very special circumstance without first discussing the matter with the me. With a good reason I may agree to replace a missed test with the final exam grade. Again, do not assume you know what constitutes a good reason without first discussing the matter with me. It is much better to contact me before the exam. Once an exam is handed in, it is very very rare that I will allow that grade to be dropped.

Calculation of Course Grade: Each midterm exam and the final exam will be graded on a scale of 0–100. Your recitations will also be graded on a scale of 0-100. Your overall score for the term is then computed by the following formula. Overall score = (.15)(test 1) + (.15)(test 2) + (.15)(test 3) + (.15)(test 4) + (.20)(final exam) + (.20)(average of recitation scores). Your letter grade for the term then comes from the following table.

Overall score x	Letter Grade	Overall score x	Letter 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 some time between 8:00 am and 2:30 pm on Monday, May 7, 2018. The exact time and location for the 2-hour time slot for the final exam will be announced in lecture near the end of the term. The final exam will not be given at any other time. Therefore, do not make plans to leave campus before that time.

Calculator: Your calculator should be able to take square roots.

Available student assistance: Instructor office hours, TA office hours, Math Clinic, Review sessions.

Date		Sections
Jan	16	8-1
	18	8-2
	23	8-3
	25	8-4
	30	Review
Feb	1	Test 1
	6	10-1
	8	10-2
	13	11-1
	15	11-2
	20	Review
	22	Test 2
	27	13-1, 13-2, 13-7
Mar	1	14-1, 14-2
	6	7-6
	8	2.1
	20	Review
	22	Test 3
	27	2.2
	29	2.2
Apr	3	2.3, 2.4
	5	2.5
	10	2.6
	12	10.1
	17	10.2
	19	10.3
	24	Review
	26	Test 4
May	1	Review

Up to Mar 1 sections are from the first part of the book. Taken from Elementary Statistics, Thirthteenth Edition by Mario F. Triola.

From Mar 6 onward sections are from the second part of the book. Taken from Finite Mathematics, Eleventh Edition by Lial, Greenwell, and Ritchey

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Recitations

1. Instructor cover: 8-1 Minitab's Assistant Feature and 8-2 Testing Claims About p.

2. Students do: Experiments 8-1, 8-2, 8-3.

3. Instructor cover: 8-3 Testing Claim About μ, 8-4 Testing Claims About σ or σ^2.

4. Students do: Experiments 8-6, 8-10, 8-14.

5. Instructor cover: 10-1 Minitab's Assistant Feature, 10-2 Scatterplot, 10-3 Correlation, and 10-4 Regression.

6. Students do: Experiments 10-1, 10-2, 10-3 and 10-5.

7. Instructor cover: sections 11-1 Goodness-of-Fit, 11-2 Contingency Tables, 13-2 Sign Test and, 13-7 Runs Test.

8 -?. Instructor will cover material from the Textbook appropriate to what has been covered in the main lecture.

Suggested Homework Problems (During lecture the instructor might suggest more.) The number of suggested homework exercises is probably larger than most people have time to do. Therefore, I place in parentheses an abbreviated set that will in most cases be adequate.
8-1: 1-32 odd (5, 13, 17, 25, 29, 31).
8-2: 1-34 odd (9, 11, 19, 23, 25).
8-3: 1-24 odd (13, 15, 21, 23).
8-4: 1-16 odd (7, 9, 11).
10-1: 13-28 odd (13, 15, 17).
10-2: 13-28 odd (13, 15, 17).
11-1: 5-24 odd (7, 9, 11, 13).
11-2: 5-20 odd (5, 7, 13, 15).
13-2: 5-16 odd (5, 9, 13).
13-7: 5-12 odd (5, 7, 9).
14-1: 5-12 odd (6, 7, 11).
14-2: 5-12 odd (5, 7, 9, 11).
In the finite mathematics section of the book some problems are designated as to be done with a graphing calculator. You may skip these problems even when they are on this list as the calculations get too messy.
7.6: 1-40 odd (11, 13, 29, 33).
2.1: 1-49 odd (1, 3, 13, 15, 25, 27, 39, 43).
2.2: 1-73 odd (17, 19, 21, 23, 25, 27, 31, 45, 47).
2.3: 1-50 odd (1, 17, 23, 25, 27, 31, 39).
2.4: 1-57 odd (5, 15, 19, 25, 31, 35).
2.5: 1-66 odd (1, 3, 9, 11, 15, 19, 21, 37, 39).
2.6: 1-29 odd (1, 5, 11, 13, 15, 17).
10.1: 1-40 odd (1, 3, 15, 17, 27, 37 a, b, c, d).
10.2: 1-44 odd (1, 3, 5, 11, 13, 27, 29).
10.3: 1-69 odd (1, 3, 5, 11, 13, 27, 29).

Students with Disabilities: If you believe that you need academic adjustments (accommodations) for a disability, please contact the Office of Disability Services (ODS), visit the ODS website– http://disabilityservices.syr.edu, located in Room 309 of 804 University Avenue, or call (315) 443-4498 or TDD: (315) 443-1371 for an appointment to discuss your needs and the process for requesting academic adjustments. ODS is responsible for coordinating disability-related academic adjustments and will issue students with documented Disabilities Accommodation Authorization Letters, as appropriate. Since academic adjustments may require early planning and generally are not provided retroactively, please contact ODS as soon as possible.

Academic Integrity: Syracuse University's Academic Integrity Policy reflects the high value that we, as a university community, place on honesty in academic work. The policy defines our expectations for academic honesty and holds students accountable for the integrity of all work they submit. Students should understand that it is their responsibility to learn about course- specific expectations, as well as about university-wide academic integrity expectations. The policy governs appropriate citation and use of sources, the integrity of work submitted in exams and assignments, and the veracity of signatures on attendance sheets and other verification of participation in class activities. The policy also prohibits students from submitting the same work in more than one class without receiving written authorization in advance from both instructors. Under the policy, students found in violation are subject to grade sanctions determined by the course instructor and non-grade sanctions determined by the School or College where the course is offered as described in the Violation and Sanction Classification Rubric. SU students are required to read an online summary of the University's academic integrity expectations and provide an electronic signature agreeing to abide by them twice a year during pre-term check-in on MySlice.

The Violation and Sanction Classification Rubric establishes recommended guidelines for the determination of grade penalties by faculty and instructors, while also giving them discretion to select the grade penalty they believe most suitable, including course failure, regardless of violation level. Any established violation in this course may result in course failure regardless of violation level. For more information and the complete policy, see http://class.syr.edu/academic- integrity/

Religious observances policy: SU religious observances policy recognizes the diversity of faiths represented among the campus community and protects the rights of students, faculty, and staff to observe religious holidays according to their tradition. Under the policy, students are provided an opportunity to make up any examination, study, or work requirements that may be missed due to a religious observance provided they notify their instructors before the end of the second week of classes. For fall and spring semesters, an online notification process is available through MySlice (Student Services -> Enrollment -> My Religious Observances) from the first day of class until the end of the second week of class.

Goals: The goal of MAT 122 is to provide the student the following.

A basic understanding of several types of the statistical process hypothesis testing.

Some knowledge about how to find the line closest to passing through a set of points and how that line can be used.

Familiarity with matrices and solving systems of linear equations.

An introduction to Markov chains.

Practical experience with statistical computer software (Minitab).