

**MAT 122 Sections 100**  
**Probability and Statistics for the Liberal Arts II**  
**Fall Semester 2013**

T TH 8:00 am - 9:20 am Heroy Geology Building Auditorium

**Instructor:** Professor Suanne Au  
**Office:** Carnegie 207

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**Office Hours:** M 11:00 - 12:00; T, TH 9:30 - 10:30

**Mathematics Prerequisite 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.

**Textbooks:** *Elementary Statistics with Finite Mathematics*, Custom Edition for Syracuse University, Math 121 & 122, and the Minitab Manual that goes with the 11th edition of *Elementary Statistics* by Mario F. Triola.

**Labs/Recitation:** In each of the lab/recitation, you will be asked to hand in something to be graded on. For Minitab labs it will be a print-out of your computer work. For recitations it will be a quiz or work that you have done along with the instructor. In the last week the lab instructors will conduct reviews.

**Homework:** Homework is for your practice. It will not be handed in; it will not be graded. In this syllabus is a long list of recommended problems for each section. A good strategy is to do enough of them so that you feel confident with the material.

**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 IDs will be checked during the exams.

Exam 1	September 12 (Thursday)	Sections 8.1 – 8.6
Exam 2	October 3 (Thursday)	Sections 10.1 – 10.3, 11.1 – 11.3
Exam 3	October 29 (Tuesday)	Sections 13.2, 13.7, 14.2, 14.3, 7.6(*)
Exam 4	November 19 (Tuesday)	2.1 – 2.5(*), 2.6(*), 10.1 – 10.2(*)

\* From the supplemental part of the text

**Make-Up Exams:** There will be no make-up exams. In the case of excused absences and otherwise at the discretion of the instructor, the final exam will be counted extra to make up for missed exams.

**Final Exam:** The MAT 122 final exam will be assigned a two-hour time slot during period 9 (exam day 3). This period is from 8:00am to 2:30pm on Wednesday, Dec 11, 2013. 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. Do not make plans to leave campus before the end of final exam period 9.

**Grading:** Once your grades (exams, labs, recitations, final) have been converted to a 100-based scale, your raw grade for the course will be computed by the following formula (and not rounded):

$$\text{Raw Grade} = (.15)(\text{exam 1} + \text{exam 2} + \text{exam 3} + \text{exam 4}) + (.20)(\text{final}) + (.20)(\text{lab/recitation})$$

Your letter grade for the course will be assigned according to the following scale.

Raw Grade $x$	Letter Grade	Raw Grade $x$	Letter Grade
$93 \leq x \leq 100$	A	$76 \leq x < 80$	C+
$90 \leq x < 93$	A-	$73 \leq x < 76$	C
$86 \leq x < 90$	B+	$70 \leq x < 73$	C-
$83 \leq x < 86$	B	$60 \leq x < 70$	D
$80 \leq x < 83$	B-	$0 \leq x < 60$	F

**Calculator:** At the very least, you will need a calculator capable of taking square roots. The Texas Instruments TI-83 and TI-84 are highly recommended. They include several statistical tests which can alleviate some of the burden of calculation.

**Available Student Assistance:** Instructor office hours, TA office hours, Math Clinic, Review sessions.

**Students with Disabilities:** If you believe that you need accommodations for a disability, please contact the Office of Disability Services (ODS) at

<http://disabilityservices.syr.edu>

located in Room 309 of 804 University Avenue, or call (315) 443-4498 for an appointment to discuss your needs and the process for requesting accommodations. ODS is responsible for coordinating disability-related accommodations and will issue students with documented Disabilities Accommodation Authorization Letters, as appropriate. Since accommodations may require early planning and generally are not provided retroactively, please contact ODS as soon as possible. You are also welcome to contact me privately to discuss your academic needs although I cannot arrange for disability-related accommodations. Making arrangements with ODS takes time. Do not wait until just before the first exam.

**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://academic\\_integrity.syr.edu](http://academic_integrity.syr.edu). For this course in particular, failure to obey the rules about what sorts of notes you are allowed to use during exams is considered to be a violation of the academic integrity policy.

**Learning Goal:** 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 best fitting a set of points and how that line can be used.
- Familiarity with matrices and solving systems of linear equations.
- Exposure to applications of matrix arithmetic
- Practical experience with statistical computer software (Minitab).

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### Suggested Homework Problems

SECTION	PROBLEMS
8-2	1-44 odd
8-3	1-32 odd
8-4	1-18 odd
8-5	1-28 odd
8-6	1-16 odd
10-2	1-28 odd, 33-36 odd
10-3	1-28 odd
11-2	1-24 odd
11-3	1-22 odd
13-2	1-20 odd
13-7	1-14 odd
14-2	1-20 odd
14-3	1-14 odd
7.6(*)	1, 3, 5, 7, 9, 11, 23, 25, 31, 39
2.1(*)	1, 3, 5, 17, 19, 23, 25, 27, 31, 37, 39, 47, 49
2.2(*)	1, 3, 5, 7, 11, 13, 15, 17, 19, 27, 29, 39, 41, 45, 55, 63, 65
2.3(*)	1-44 odd
2.4(*)	1-20 odd, 31, 37, 43, 49
2.5(*)	1-18 odd, 27, 29, 35, 37, 49, 59, 65
2.6(*)	1-20 odd, 27, 29
10.1(*)	1-24 odd, 29, 31, 39
10.2(*)	1-24 odd, 25, 27a, 31, 41
10.3(*)	1-16 odd, 23, 25

**Recitations:**

1. Instructor covers 8-3, Testing Hypotheses About  $p$ .
2. Students do 8-1, 8-2, 8-3 (as time allows).
3. Instructor covers 8-5, Testing Hypotheses About  $\mu$  (using  $t$ ), and 8-6, Testing Hypotheses About  $\sigma$  or  $\sigma^2$ .
4. Students do Experiments 8-6, 8-10, 8-14.
5. Instructor covers 10-1 Scatter Plot, 10-2 Correlation, 10-3 Regression.
6. Students do: Experiments 10-1, 10-2, 10-4.
7. Instructor covers sections 11-1, 11-2, 13-1, 13-2, 13-7.
8. Instructor covers 13-2 Sign Test. Student do 13-1, 13-2. Instructor covers 13-7 Runs Test. Students do 13-24.
9. Instructor covers 14-4  $p$ -chart. Students do 14-9, 14-12
10. Start with Bayes Theorem (from supplemental part of the text)
- 11, 12, 13. Instructor will cover material from Finite Mathematics appropriate to what has been covered in the main lecture.