MAT 222 - Elementary Probability and Statistics II - Spring 2019 Syllabus

This is the common syllabus for all MAT-222 sections for Spring 2019. Each section lecture instructor will provide additional information for their individual section(s). Please make sure that you are familiar with both the common syllabus as well as your section specific information. Contact information and office hours for all math faculty and teaching assistants are also available at http://math.syr.edu/people/office-hours.html

Section	Days	Times	Room	Instructor	e-mail
M001	TuTh	11:00 AM-12:20 PM	Carnegie 122	E. Akofor	eakofor@syr.edu
M003	MWF	11:40 AM-12:35 PM	Carnegie 122	C. McWhorter	cgmcwhor@syr.edu
M005	MWF	10:35 AM-11:30 AM	Carnegie 122	T. Wu	twu119@syr.edu
M006	TuTh	03:30 AM-04:50 AM	Carnegie 115	C. Donohue	cgdonohu@syr.edu

Course Supervisor: Thomas John, Ph.D., Carnegie 313 D, Phone: 315-443-1587, email: thjohn@syr.edu. Please inform your instructor of any problems that you have with this course. Problems not satisfactorily resolved with your instructor should be brought to the attention of the course supervisor without delay.

Course Description: This is the second course in the probability and statistics sequence, MAT 221-222, designed for various academic majors. The primary objectives of the course are to understand basic concepts of statistical inference and to learn commonly used statistical methods of inference. The course will cover concepts of estimation and hypothesis testing, inferences involving two populations, Chi-square tests, regression analysis, and analysis of variance.

Text: *Introduction to the Practice of Statistics*, by Moore, McCabe, and Craig, 9th Edition. ISBN: 9781319013387. Chapters 6 through 13 will be covered in this course. Book companion site: http://www.macmillanlearning.com/catalog/studentresources/ips9e .

Prerequisites: MAT 221

Liberal Arts Core: This course is the second course in the Quantitative Skills sequence MAT 221-222.

Calculators: You will need a calculator to do the computations that will arise throughout the course. No specific calculator is required, but TI 84 or TI 83 graphing calculator is highly recommended.

Grading: Your overall course grade will be based on two semester exams (counting 20% each for a total of 40%), the cumulative final exam (counting 30%), homework (counting 10%), weekly Quiz (counting 10%), and a data analysis project (10%). Final grades will be assigned according to the following scale:

Raw Grade	Letter Grade		Raw Grade	Letter Grade		Raw Grade	Letter Grade
93 ≤ x ≤ 100	A		90 ≤ x < 93	A -			
87 ≤ x < 90	B +		83 ≤ x < 87	B		80 ≤ x < 83	B -
77 ≤ x < 80	C +		73 ≤ x < 77	C		70 ≤ x < 73	C -
60 ≤ x < 70	D		0 ≤ x < 60	F			

Special Note on the Final Exam: The final examination covers the entire course. It is a two-hour exam and will be given on **Monday, May 6, 2019**, between the hours of 8:00 a.m. and 2:30 p.m. The exact time and location of your final examination will be announced in lecture. The final examination is given at this announced time and at no other time. All students must take the cumulative final exam at the scheduled time. **There will be no exceptions**, and so **do not make plans to leave campus before 2:30 p. m. on Monday, May 6, 2019**.

Special Note on the Drop Deadline: Academic Drop Deadline and the Financial Drop deadline will both occur on ***Monday February 4 (three weeks from the first day of classes)***. Students may still withdraw from courses after February 4 but before the WD deadline Tue, April 16, 2019; this would place a 'WD' grade on their transcripts.

Semester Quizzes/Exams: There will be no make-up quizzes/tests. For a missed quiz/test with a valid excuse (documented by a note from a doctor or the dean's office), performance on the corresponding part of an exam or the corresponding part of the cumulative final exam will be used to replace the missing grade.

Quizzes/exams will be closed books and closed notes. Relevant parts of formulae card and statistical tables will be provided. Calculators cannot be shared and calculators on cell phones cannot be used. Note that Carnegie library (2nd floor) offers calculators for 3 hour loan with SU ID. Cell phones or any devices capable of wireless communication (for example, smart watches) are not allowed during quizzes/exams.

Homework: Homework will be mainly done online using WeBWorK. To login, go to the link: http://webwork.syr.edu/webwork2/MAT_222_Spring_2019/ . Link and the login will be setup by the first day of classes. Once ready, the username will be your NetID in lower case letters and your password is initially set to be your 9-digit SUID number. You should change it after logging in for the first time. Also, note that even if you used WeBWorK before for another course, the password is reset to the 9-digit student id.

Additional HW assignments may be announced by the instructor and some of those may be collected.

Statistical Software: Minitab (a statistical software) will be introduced in lecture. Data analysis problems using Minitab will be assigned. If additional help is needed, please see https://www.minitab.com/en-us/support/videos/ and https://onlinecourses.science.psu.edu/statprogram/minitab, as well as many other websites/videos available on the internet.

Final Project: Data analysis project will be assigned in the middle of the semester. The objective of the project is to investigate the problem of your interest using statistical methods learned in the course. You will be required to analyze data using Minitab, and write a report on your analysis. Specifics of the project will be provided in the instructions document and will be discussed in lecture.

Note on Statistical Software: Minitab software is available at all PC's on computer clusters and the library desktops. For additional information, see http://its.syr.edu/computer-labs/index.html and https://answers.syr.edu/display/library/Software+Available . If a student is familiar with another statistical software (e.g., SAS, SPSS, STATA, R), they may use that software instead of Minitab for both the assignments and the project described in the previous sections. In such a scenario, the support which the instructor can offer might be limited. The software used must be a recognized statistical software and the student should get the instructor's permission if they choose to use a software other than Minitab.

Attendance: You are expected to attend every class and every exam. If you miss a class, it is your responsibility to obtain a copy of the lecture notes for that class from another student. You are also responsible for any announcements about changes to the course schedule, the exam schedule, or the course requirements that were made during that class.

Cell Phones: All electronic devices other than the calculator should be turned off and put away during class. Calculators on cell phones are not to be used on tests or quizzes.

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. Making arrangements with ODS takes time. Do not wait until just before the first test. Students taking exams at ODS should take them at times which overlap the exam time for the rest of the class.

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 are 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 (MySlice -> Student Services -> Enrollment -> My Religious Observances) from the first day of class until the end of the second week of class.

Related link: http://supolicies.syr.edu/studs/religious_observance.htm

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.

Specifically for this course (MAT-222), the academic integrity aspects relate to quizzes/exams, as well as independent work to be done for the semester project and report.

See the specific policies under "Semester Quizzes/Exams" on page 2 of this syllabus. Specifically, a student is not allowed to use ANY electronic device except for their calculator during the quiz/exam until the quiz/exam is handed in. Accessing material beyond the formula card, the tables, and standard calculator functionalities during the quiz/exam will be a violation of academic integrity.

For the semester project and report, standard plagiarism policies apply. Please review Syracuse University Libraries page on plagiarism (https://researchguides.library.syr.edu/c.php?g=258089&p=1723661). Additional rules regarding the independent work to be done for the project will be specified in lecture.

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.

Related link: http://class.syr.edu/academic-integrity/policy/

Available Student Assistance: Your lecture instructor will have office hours. In addition, the Mathematics Department offers help in the Math Clinic. See http://math.syr.edu/undergrad/math-help.html (information to be posted by the 3rd week of classes). In addition, Center for Learning and Student Success (CLASS) offers free group tutoring sessions for MAT 222. Visit http://class.syr.edu/ to learn more and register for a session.

Tentative Course Schedule:

Week	Topics
Week of Jan-14	Sec 6.1 & 6.2: Review
Week of Jan-21	Sec 6.4, Sec 7.1
Week of Jan-28	Sec 7.2
Week of Feb-04	Sec 7.3, Sec 8.1
Week of Feb-11	Sec 8.1, Sec 8.2
Week of Feb-18	Catchup/Review/**Exam 1**
Week of Feb-25	Sec 9.1, Sec 9.2
Week of Mar-04	Sec 9.2, Chapter 10

Week	Topics
Week of Mar-11	*Spring Break*
Week of Mar-18	Chapter 10
Week of Mar-25	Chapter 10/Chapter 11
Week of Apr-01	Chapter 11
Week of Apr-08	Catchup/Review/**Exam 2**
Week of Apr-15	Chapter 12
Week of Apr-22	Chapter 13
Week of Apr-29	Catchup

Cumulative final exam will be a 2-hr block (TBA) between 8 a.m. - 2:30 p.m. on MONDAY – MAY 6

Suggested HW Problems from the 9th Edition of the textbook
(Problems marked with * are recommended to be done with MINITAB)

Chapter 6
Section 6.1   6.12, 6.13, 6.20, 6.30, 6.33, 6.36
Section 6.2   6.52, 6.53, 6.54, 6.58, 6.59, 6.72, 6.74, 6.83-89
Section 6.4   6.118, 6.119, 6.121

Chapter 7
Section 7.1   7.15, 7.18, 7.20-22, 7.25*, 7.27*, 7.30, 7.32*, 7.34, 7.38*, 7.41*
Section 7.2   7.58, 7.60*, 7.67*, 7.68, 7.78, 7.79*, 7.80*, 7.83

Chapter 8
Section 8.1   8.17, 8.18, 8.19, 8.20, 8.32, 8.33, 8.42, 8.44
Section 8.2   8.58, 8.60, 8.62, 8.63, 8.64-8.66, 8.70

Chapter 9
9.15, 9.17, 9.19, 9.21, 9.28, 9.33, 9.34, 9.44, 9.48, 9.49, 9.52, 9.55

Chapter 10
10.10*, 10.12*, 10.14*, 10.16*, 10.18*, 10.19*, 10.20*, 10.29, 10.31, 10.32, 10.33, 10.37*, 10.43*, 10.45*, 10.46*, 10.48*, 10.52*, 10.61*

Chapter 11
11.8, 11.10, 11.18*, 11.27*, 11.28*, 11.29*, 11.30*, 11.35*, 11.36*, 11.38*, 11.42*, 11.47*

Chapter 12
12.11, 12.14, 12.15, 12.16, 12.17, 12.19, 12.23, 12.24, 12.26, 12.35, 12.36*, 12.37, 12.39, 12.40, 12.45, 12.46, 12.51*, 12.52*, 12.58, 12.64*, 12.72*, 12.75*

Chapter 13
13.6, 13.7, 13.8, 13.9, 13.10, 13.11*, 13.13, 13.22*, 13.23*, 13.24, 13.40*, 13.41*, 13.42*, 13.43*, 13.44*, 13.47*, 13.56*, 13.58*