

Syracuse University
Department of Mathematics
MAT 653: STATISTICAL SIMULATION & NONSTANDARD DATA ANALYSIS
Term 1 - Fall 2017-18

Instructor	William Volterman
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Lectures	TH 2:00 pm – 3:20 pm CARN 110
Office Hours	W 9:00 am – 12:00 pm CARN 316A or by appointment
Text Book	Simulation (5th Edition) <i>Sheldon Ross</i> ISBN-13: 978-0124158252 ISBN-10: 0124158250

Prerequisite: Registration as a graduate student of Mathematics or Statistics or permission from the instructor.

Goals: To understand and apply various montecarlo techniques and their applications to data analysis. The learning outcomes as stated in the catalogue are as follows.

Pseudo random generation, Simulation of discrete/continuous random variates, ordinary monte carlo, variance reduction, bootstrapping, markov chain monte carlo

Software: Part of this course will require use of the R statistical software language. R is free and can be downloaded from <http://probability.ca/cran>. More information is also available at <http://www.r-project.org>.

You can find free manuals available at <http://cran.r-project.org/manuals.html>, in particular you can get the R manual as a pdf file at <http://cran.r-project.org/doc/manuals/R-intro.pdf>.

You may also want to consider the R IDE RStudio available at <http://www.rstudio.com/products/rstudio/>.

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/policy/>

Important Message The instructor(s) and university reserve the right to modify elements of the course during the term. The university may change the dates and deadlines for any or all courses in extreme circumstances. If either type of modification becomes necessary, reasonable notice and communication with the students will be given with explanation and the opportunity to comment on changes. It is the responsibility of the student to check their email and course website during the term and to note any changes.

I.e., everything in this outline (or posted online) is subject to change.

Grading Scheme: The grading scheme is tentatively as below. Dates will be announced later. Alternative grading schemes may be considered .

- Assignments: 70% total
- Exam 30%

Grade Conversion Chart: Note that the following grade conversion chart is used for this course. This may be different from your other courses.

Grade	F	D	C-	C	C+	B-	B	B+	A-	A
Score	0-49	50-59	60-62	63-66	67-69	70-72	73-76	77-79	80-89	90-100

Attendance: You are expected to attend every class. 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 schedule/requirements/policies.

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. You are also welcome to contact me privately to discuss your academic needs although I cannot arrange for disability-related accommodations.

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.

Key dates: See the Academic Calendar for important dates during the term
<http://syracuse.edu/registrar/acadcalendars/acadd12017-18.pdf>

- First day of classes: **August 29th**
- Financial deadline to drop class: **September 18th**
- Academic drop deadline: **October 23rd**
- Withdrawal deadline: **November 17th**
- Last day of classes: **December 7th**