SMU		
	Course	STAT 6324: Computational Statistics
	Time	TuTh, 2:00 pm–3:20 pm
	Location	Moody School 0125

Instructor Information

Instructor	Sy Han (Steven) Chiou
Office	Heroy Hall 105
Email	schiou@smu.edu
Office hours	Wednesday 4:00 pm - 5:00 pm and Thursday 3:30 pm - 5:00 pm or by appointment. In-person or virtual office hours are both welcome.

General Course Information

Course website	All course materials, such as lecture notes, homework assignments, and exams, will be posted on Canvas.
Prerequisite	STAT 5373 or STAT 6327. Basic knowledge in `R`.
Course description	This course has been developed to introduce students to the fundamentals of statistical computing and computational methods in statistics with emphasis on the use of statistical software packages, statistical simulation, and related topics.
Learning outcomes	**1.** Learn and apply efficient coding practices in `R`. **2.** Have a working knowledge of `Rcpp`. **3.** Understand how to express basic mathematical and statistical problems in `R`. **4.** Become familiar with developing and performing simulation studies in `R`. **5.** Employ Monte Carlo methods to address statistical problems.
Required text	There is no required textbook for this course; however, the following materials are used as supplementary references.
Supplementary text	**1.** *Modern Applied Statistics with S*, 4th edition by W.N. Venables and B.D. Ripley. ISBN: 978-0387954578 **2.** *Numerical Linear Algebra for Applications in Statistics* by James E. Gentle. ISBN: 0-387-98542-5 **3.** *Basic Elements of Computational Statistics* by Wolfgang Karl Härdle, Ostap Okhrin, and Yarema Okhrin. ISBN: 978-3-319-55335-1
Other requirements	This course is computationally intensive; therefore, access to a laptop or desktop computer is essential. You are welcome to bring your laptop to class to follow along with in-class examples. However, please exercise discretion to avoid disturbing your fellow classmates.

Course Policies

Grading criteria	The course letter grade will be determined based on homework assignments and two in-class exams. The breakdown of the grade distribution is as follows. **Homework (50%)**: • There will be 6 homework assignments. • The lowest homework grade will be dropped. **Exams (25% $\times$ 2)**: • There will be two in-class exams. • Exam 1 will be on October 31 (Thursday) and Exam 2 will be during the final exam week. • `R` will be required complete the exams. • The exam will be open book and open note but students are not allowed to collaborate with classmates or people outside of class.
Submission guidelines	Here are some general policies: • All reports should be submitted via Canvas within the designated submission window. • All reports should be prepared with the provided `R Markdown` templates and knitted to `pdf`. • A `.Rmd` file and a `.pdf` file (generated by `R Markdown` are required in submission. • Late submissions will not be graded and will be counted as 0. • Submissions a `.Rmd` that won't compile will not be graded.
Letter grade	The letter grade will be assigned based on the overall course score with the cutoffs: **A**: [93, 100]; **A**$^-$ [90, 93); **B**$^+$ [87, 90); **B** [83, 87); **B**$^-$ [80, 83); **C**$^+$ [77, 80); **C** [60, 77); **F** [0, 60).

Institutional Policies and Procedures

Generative AI
The use of any form of Generative AI (e.g., ChatGPT, iA Writer, DALL-E) is not permitted in this course. The assignments have been designed to ensure that you develop and demonstrate the knowledge and skills associated with the learning outcomes laid out in the syllabus. Because generative AI tools and detection software are developing at a rapid pace, it is possible that assignments you turn in might appear as "false positives" and raise concerns of possible academic dishonesty. To ensure that you can demonstrate intellectual ownership of the assignments you submit, you are therefore encouraged to maintain clear evidence of your work (e.g., time-stamped drafts and notes; copies and links to source material). Any violation of these rules will be treated at the undergraduate level within the SMU Student Honor Code and at thegraduate and professional level within the honor codes found in their respective school policies. If there is sufficient cause for concern, an incident report will be submitted for review by the Office of Student Conduct and Community Standards.

Disability Accommodations
Students who need academic accommodations for a disability must first register with Disability Accommodations & Success Strategies (DASS). Students can call 214- 768-1470 or visit http://www.smu.edu/Provost/SASP/DASS to begin the process. Once they are registered and approved, students then submit a DASS Accommodation Letter through the electronic portal, DASS Link, and then communicate directly with each of their instructors to make appropriate arrangements. Please note that accommodations are not retroactive, but rather require advance notice in order to implement.

Religious Observance
Religiously observant students wishing to be absent on holidays that require missing class should notify their professors in writing at the beginning of the semester and should discuss with them, in advance, acceptable ways of making up any work missed because of the absence. https://www.smu.edu/StudentAffairs/ChaplainandReligiousLife/ReligiousHolidays

Excused Absences for University Extracurricular Activities
Students participating in an officially sanctioned, scheduled university extracurricular activity should be given the opportunity to make up class assignments or other graded assignments that were missed as a result of their participation. It is the responsibility of the student to make arrangements for make-up work with the instructor prior to any missed scheduled examinations or other missed assignments. (See 2020- 2021 SMU Undergraduate Catalog under "Enrollment and Academic Records/Excused Absences.")

Student Academic Success Programs
Undergraduate students needing assistance with writing assignments for SMU courses may schedule an appointment with the Writing Center through Canvas. Students who would like support for subject-specific tutoring or success strategies should contact SASP, Loyd All Sports Center, Suite 202; 214-768-3648; https://www.smu.edu/sasp.

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