AMS 394 - Statistical Laboratory

Fall 2023; 10:30 AM - 11:50 AM; Tue & Thu

Instructor Information

Instructor	Email	Office Location & Hours
Hyunwook Koh, Ph.D.	hyunwook.koh@stonybrook.edu	B521,3:00 PM - 5:00 PM; Mon & Wed (or by appointment)

Course Information

Course Description

This course is intended to teach statistical programming in R. This course also covers various concepts and approaches in statistical inference (e.g., law of large numbers, central limit theorem, permutation, bootstrap) and various statistical methods (e.g., parametric and non-parametric methods for one-sample and two-sample inferences, analysis of variance, linear regression, generalized linear models, etc).

Pre-requisites

AMS 310 or AMS 315

Teaching Mode

All classes will be held in-person (**A313**).

Course Materials

All the course materials (e.g., lecture notes, programming notes, assignments) can be found on **Brightspace**.

Preparation Materials

Please bring your laptop for faster set-ups and carry-outs.

Textbook

"Introductory Statistics with R (Statistics and Computing)" by Peter Delgaard, 2^{ed} edition, Springer, 2008 (optional)

Academic Integrity

Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. Faculty are required to report any suspected instances of academic dishonesty to the Academic Judiciary. For more comprehensive information on academic integrity, including categories of academic dishonesty, please refer to the academic judiciary website at http://www.stonybrook.edu/uaa/academicjudiciary/

School Policy on Attendance

1. All students are required to attend every class.
2. If a student has over 20% unexcused absences, the student's final course grade will be an F.
3. Students should report the reason of absence to the professor in advance, or immediately after the absence.
4. When a student excuses his/her absence, the student must provide documentation of the reason for the absence to the professor.
5. The professor of the course reserves the right to excuse absences.
6. The professor may excuse the absence if the submitted documentation fulfills the following conditions: extreme emergences, severe medical reasons with doctor's note, very important events.

Critical Incident Management

Stony Brook University expects students to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of Judicial Affairs any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, or inhibits students' ability to learn.

Course Evaluations

Stony Brook University values student feedback in maintaining the high-quality education it provides and is committed to the course evaluation process, which includes a mid-semester assessment as well as an end-of-the-semester assessment, giving students a chance to provide information and feedback to an instructor which allows for development and improvement of courses. Please click the following link to access the course evaluation system: http://stonybrook.campuslabs.com/courseeval/

Grading

Final grade = *f*(Attendance [10%] + Homework [5%] + Midterm 1 [25%] + Midterm 2 [30%] + Final [30%]); ABCDF grading; 3 credits

Total score	Final grade
94 - 100	A
90 - 93	A-
87 - 89	B+
84 - 86	B
81 - 83	B-
78 - 80	C+
75 - 77	C
72 - 74	C-
69 - 71	D+
66 - 68	D
61 - 65	D-
≤ 60	F

Tentative Course Schedule

No.	Date	Topic	Homework
1	Aug 29	Introduction to R	TBA
2	Aug 31	Introduction to R	TBA
3	Sep 5	Description and arithmetical expressions of R objects	TBA
4	Sep 7	Description and arithmetical expressions of R objects	TBA
5	Sep 12	Control structures	TBA
6	Sep 14	Control structures	TBA
7	Sep 19	Data input and output	TBA
8	Sep 21	Data input and output	TBA
9	Sep 26	Sub-setting objects	TBA
10	Sep 28	No class (Chuseok)	
11	Oct 3	No class (Korea National Foundation Day)	
12	Oct 5	Data manipulations	TBA
13	Oct 10	Data manipulations	TBA
14	Oct 12	Review	
15	Oct 17	Midterm 1	
16	Oct 19	Data aggregation	TBA
17	Oct 24	Data aggregation	TBA
18	Oct 26	Writing user-defined functions	TBA
19	Oct 31	Writing user-defined functions	TBA
20	Nov 2	Character manipulations	TBA
21	Nov 7	Character manipulations	TBA
22	Nov 9	Graphics in R	TBA
23	Nov 14	Graphics in R	TBA
24	Nov 16	Review	
25	Nov 21	Midterm 2	
26	Nov 23	Advanced topics	TBA
27	Nov 28	Advanced topics	TBA
28	Nov 30	Advanced topics	TBA
29	Dec 5	Review	
30	Dec 7	No class (Correction day)	
31	Dec 12	Final	

Tentative Exam Schedule

Date	Subject
Oct 17	Midterm 1
Nov 21	Midterm 2
Dec 12 (9:00 AM – 11:30 AM)	Final