PSYC 2020-A01 Syllabus

Psychological Statistics Lab

Fridays, 11:00am–1:45pm, J.S. Coon 248

Instructor Information

Instructor	Email	Drop-in Hours & Location
Jessica Helmer	jhelmer3@gatech.edu	Wednesdays 10–11am, JS Coon 240 or Zoom
Teaching Assistant	**Email**	**Drop-in Hours & Location**
Alina Tran	atran263@gatech.edu	Thursdays 12–1pm, JS Coon 240

General Course Information

Description

This lab accompanies Psychological Statistics to introduce how to use a variety of statistical methods for psychological research in R. We will cover how to work with probability, random variables and distributions, hypothesis testing, analysis of variance (ANOVA), and regression in R. We will also cover basic data cleaning, analysis workflow, and visualization. This lab aims to provide a strong foundation for R skills so that students can apply it in further courses and research.

Pre- &/or Co-Requisites

Co-requisite: PSYC 2020

Course Goals and Learning Outcomes

- Learn the concepts underlying selected statistical methods
- Learn some of the mathematical and statistical underpinnings of these statistical methods.
- Learn how to use R to conduct statistical analyses and RMarkdown to report

Course Requirements & Grading

This lab is a required component of PSYC 2020, and students' grade in this class comprises 20% of their total PSYC 2020 grade—students will not be given a separate, standalone lab grade. Grading in this lab will be from weekly lab assignments. This course will have 12 assignments total, and we will drop the lowest two lab assignment grades, meaning that lab grades will be based on 10 lab assignments. This means each of the 10 final lab assignments is worth 2% of students' total PSYC 2020 grade.

Assignment	Quantity	Weight
Lab Assignments	10 out of 12	100% (20% of PSYC 2020 grade)

Extra Credit Opportunities

We expect to provide opportunities for extra credit in lab throughout the semester. We will announce and provide details about these opportunities as they arise. Successful completion of these opportunities will add points to your grade, such that students can make up lost points on assignments; however, please note that your total grade for the lab cannot exceed 100%.

Description of Graded Components

Lab assignments aim to evaluate students' ability to apply the R concepts from class independently. Students are expected to complete these assignments in class during the lab session, and they will be due on Canvas at 11:59pm on the day they are assigned.

Course Materials

Materials/Resources

This lab will use the software R through the RStudio interface. We will learn how to output code, text, and results with RMarkdown, which is a built-in tool of RStudio. R and RStudio are both free. We will cover software installations for R and RStudio in class.

The Comprehensive R Archive Network: https://cran.r-project.org/

RStudio: https://www.rstudio.com/

R Markdown: https://rmarkdown.rstudio.com/

Course Website and Other Classroom Management Tools

This course will use Canvas.

Course Policies, Expectations, & Guidelines

Academic Integrity

Georgia Tech aims to cultivate a community based on trust, academic integrity, and honor. Students are expected to act according to the highest ethical standards. Review Georgia Tech's Honor Code and the student Code of Conduct.

Any student suspected of cheating or plagiarizing on a quiz, exam, or assignment will be reported to the Office of Student Integrity, who will investigate the incident and identify the appropriate penalty for violations.

Accommodations for Students with Disabilities

If you are a student with learning needs that require special accommodation, contact the Office of Disability Services (404-894-2563) as soon as possible to make an appointment to discuss your special needs and to obtain an accommodations letter. Please also e-mail me as soon as possible in order to set up a time to discuss your learning needs.

Attendance and/or Participation

Regular in-person attendance is strongly encouraged as it plays a vital role in your academic success and engagement with the course material. Attending classes allows you to interact with peers, ask questions, and engage in discussions that contribute to your understanding of the subject matter. Your presence in class reflects your commitment to the learning process and contributes to the overall class dynamics.

If you are unable to attend a class, it is your responsibility to catch up on missed material and assignments. Please inform the professor if you have an excused absence due to medical or other legitimate reasons. The instructor reserves the right to modify the attendance policy if deemed necessary to accommodate special circumstances.

Collaboration & Group Work

Students are permitted to collaborate on assignments; however, each student must independently complete and submit the assignment on their own. Identical responses are not allowed. Your final submitted work should be your own original work.

Extensions, Late Assignments, & Re-Scheduled/Missed Exams

Late lab assignments will not be accepted except in the case of official institute absences. The lab instructor reserves the right to approve exceptions for unexpected circumstances or emergencies. Exceptions require advance communication and approval from the lab instructor. However, in unapproved cases, late assignments will receive a zero.

Inclement Weather and Digital Learning Days

Though it is unlikely out of concern for the health of everyone, the in-person labs may move online for a period if necessary during the semester.

Student-Faculty Expectations Agreement

At Georgia Tech, we believe that it is important to strive for an atmosphere of mutual respect, acknowledgement, and responsibility between faculty members and the student body. The Student-Faculty Expectations articulate some basic expectations that you can have of me and that I have of you. In the end, simple respect for knowledge, hard work, and cordial interactions will help build the environment we seek. Therefore, I encourage you to remain committed to the ideals of Georgia Tech while in this class.

Use of Artificial Intelligence

Use of Artificial Intelligence (AI) is permitted as a learning tool to clarify concepts. However, use of AI to directly complete assignments is not allowed. Your final submitted work should be your own original work. If you use AI to assist in your work, you are solely responsible for ensuring the accuracy of the information provided. Submitting assignments generated by AI constitutes plagiarism and will be handled in accordance with Georgia Tech academic integrity guidelines.

Campus Resources for Students

Undergraduate Student Academic Success Resources

A list of resources for undergraduate students' academic success and information about advising can be found at Success at Tech.

- **1:1 Tutoring:** Students looking for additional assistance outside of the classroom are advised to consider working with a peer tutor through Knack. Georgia Institute of Technology has partnered with Knack to provide students with access to verified peer tutors who have previously aced this course. To view available tutors, visit gatech.joinknack.com and sign in with your student account.

Graduate Student Academic and Professional Success Resources

A list of resources for graduate students is given on the Office of Graduate and Postdoctoral Education website. Specific information for current graduate students includes:

- Academic Resources such as the Communications Center, Language Institute, Library, Catalog, Registrar, resources for conducting research, Advocacy and Conflict Resolution resources, and how to manage unexpected situations that may impact your academic performance;

- Student Resources such as Campus Services, Child Care/Family programs, Health & Wellness, Career Services, and the Student Resource Guide; and

- Professional Development such as the programming from the Career Center and other professional development resources and events

Student Well-Being

At Georgia Tech, we are concerned about your overall physical, social, and mental well-being. A comprehensive list of wellness related resources has been compiled and maintained by the Office of the Vice President for Student Engagement and Well-being (student-resource-guide (gatech.edu)

Course Schedule

Topics are subject to change to closer follow the content of the lecture and/or match student needs and interests. Assignments are due at 11:59pm on the date they are assigned.

Week	Date	Lab Topic	Assignment
1	08/22	Basic R	Assignment 1
2	08/29	Descriptive Statistics I	Assignment 2
3*	09/05	Descriptive Statistics II	
4	09/12	Probability Distributions	Assignment 3
5	09/19	Intermediate R	Assignment 4
6	09/26	Sampling Distributions & CLT	Assignment 5
7	10/03	Hypothesis Testing	Assignment 6
8	10/10	Confidence Intervals	Assignment 7
9	10/17	One-Sample *T*-Test	Assignment 8
10	10/24	Advanced R	Assignment 9
11	10/31	Repeated Measures *T*-Test	
12	11/07	Chi-Squared Test	Assignment 10
13	11/14	Correlation & Regression	Assignment 11
14	11/21	One-Way ANOVA	Assignment 12

*Week 3 lab will be a recorded lecture due to conference travel.