STAT 1152: Introduction to Mathematical Statistics

Spring 2022

Lecture Hours: M/W 1:30 PM – 2:45 PM, 5401 Wesley W Posvar Hall

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Office Hours: Tuesday 2-3 PM; Wednesday 10-11 AM
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Textbook

Miller and Miller, John E. Freund's Mathematical Statistics with Applications, Eighth Edition, Pearson Prentice Hall, NJ (ISBN: 978-0134995373)

Course Description

This course is continued from STAT1151, "Introduction to Probability". It introduces the elementary concepts of statistical inference, which are essential in appreciation of advanced statistical methods. A brief review of probability theory will be provided in the beginning. Topics include sampling distributions, point and interval estimation, hypothesis testing, regression, and analysis of variance.

Prerequisite: Calculus (Differentiation and Integration) and STAT 1151 (Probability).

Canvas

We will be using Canvas as the learning management system (LMS) for this course. You should visit Canvas (http://canvas.pitt.edu) at least once a week. Here you will find all relevant course material.

Tentative Lecture Schedule

Week	M	W	Topics	Chapters/Sections	Due
1	1/10	1/12	Review of probability	1-7	
2	1/17	1/19	Sampling distributions: Large sample theory	8.1-8.2	
3	1/24	1/26	Sampling distributions: Normal sampling theory	8.4-8.6	HW 1
4	1/31	2/2	Sampling distributions: Order statistics	8.7	HW 2
5	2/7	2/9	Point estimation: properties of estimators	10.1-10.6	HW 3
6	2/14	2/16	Methods of moments; Maximum-likelihood	10.7-10.8	HW 4
7	2/21	2/23	Bayes estimation; Review of Midterm Exam	10.9	HW 5
8	2/28	3/2	Midterm Exam; Interval estimation of means	11.1-11.3	
9	3/7	3/9	Spring Recess (no classes)		
10	3/14	3/16	Interval estimation of proportions and variances	11.4-11.7	HW 6
11	3/21	3/23	Hypothesis testing	12.1-12.2,12.6,12.4	
12	3/28	3/30	Hypothesis testing; Tests about means	12.5; 13.1-13.3	HW 7
13	4/4	4/6	Tests about variances and proportions	13.4-13.6	
14	4/11	4/13	Goodness of fit; Regression and Correlation	13.7-13.8; 14.1-14.3	HW 8
15	4/18	4/20	Regression and Correlation; Review for the Final	14.4-14.6	HW 9

***January 17 is Dr. Martin Luther King's birthday observance (University closed). No class.**

Grades

Grade for this course will be calculated according to the following breakdown.

Homework assignments	50%
Midterm Exam	20%
Final Exam	30%

Homework Assignments

9 homework assignments will be posted on Canvas**.**

Rules:

- **All assignments should be your individual work**; otherwise, points will be deducted.
- **Late homework will not be accepted**.
- Your homework should be neat and well-organized.

Examinations

There are two exams (one midterm and one final). All exams are required and there will be no make-up exams. Missed exams will receive a grade of zero.

Academic Integrity

Students in this course are expected to comply with the University of Pittsburgh's Academic Integrity policy, which can be found at http://www.as.pitt.edu//fac/policies/academic-integrity. Any student suspected of violating this obligation for any reason during the semester will be required to participate in the procedural process, initiated at the instructor level, as outlined in the University Guidelines on Academic Integrity. This may include, but is not limited to, the confiscation of the examination of any individual suspected of violating University Policy.

Disability Accommodations

Students with documented disabilities are entitled to reasonable accommodations if necessary. If you have a disability that requires special accommodations, please contact Disability Resources and Services in 140 William Pitt Union no later than the second week of the semester. Their website is http://www.drs.pitt.edu/ and their phone number is 412-648-7890. They will verify your disability and determine reasonable accommodations for this course.

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Course Grades:

A+	$\geq 97\%$
A	$93 - < 97\%$
A-	$90 - < 93\%$
B+	$87 - < 90\%$
B	$83 - < 87\%$
B-	$80 - < 83\%$
	etc…