

Detailed Schedule
MTH 1210 Introduction to Statistics
Fall 2019

(*Lab dates subject to change based on computer lab availability)

<u>Week</u>	<u>Date</u>	<u>Assignment, Lab or Exam</u>	<u>Lecture Topics</u>	<u>Sections in Book</u>
1	Mon., Aug. 19		intro, types of variables (qualitative variables, and discrete and continuous quantitative variables), pop'n, sample, census, descriptive vs inferential statistics, observational study vs experiment,	1.1, 2.1
	Wed., Aug. 21		simple random samples (SRSs), treatments, response, principles of experimental design	1.2, 1.4
2	Mon., Aug. 26		grouping qualitative data, bar charts, grouping quantitative data, histograms, distributions shapes, sample data vs pop'n data, sample statistic vs pop'n parameter	2.2, 2.3, 2.4
	Wed., Aug. 28	HW 1 Due	measures center (sample mean, median, and mode), resistance	3.1
3	Mon., Sept. 2	No Class, Labor Day		
	Wed., Sept. 4	Lab 1	measures of variation (sample range, variance, standard deviation), empirical rule	3.2, 3.3
4	Mon., Sept. 9	HW 2 Due	quartiles, IQR, 5-number summary and box plots, population parameters (population mean, population variance and standard deviation), estimation, z-scores	3.4, 3.5
	Wed., Sept. 11	Lab 2, Project Proposal Due	intro to probability, chance experiments, properties of probabilities, sample space, outcomes, events, forming new events (using "not", "and", "or"), mutually exclusive events, frequentist interpretation of probability, probabilities involving equally likely outcomes	4.1, 4.2
5	Mon., Sept. 16	HW 3 Due	Special Addition Rule (for mutually exclusive events), Complementation Rule, General Addition Rule, contingency tables	4.3, 4.4
	Wed., Sept. 18	Exam I	Independent events, Special Multiplication Rule (for independent events), <i>(if time permits: conditional probability and the Conditional Probability Rule, General Multiplication Rule)</i>	4.6, <i>(if time permits: 4.5)</i>
6	Mon., Sept. 23	HW 4 Due	discrete and continuous random variables, probability distributions for discrete random variables, mean of a discrete random variable, variance and standard deviation of a discrete random variable	5.1, 5.2
	Wed., Sept. 25	Lab 3	<i>(If time permits: binomial distribution)</i>	<i>(if time permits: 5.3)</i>
7	Mon., Sept. 30		probability distributions for continuous random variables (density curves), normal distributions, mean and standard deviation of a normal distribution, standard normal distribution, finding an area under the standard normal density curve for a given z-score	6.1

	Wed., Oct. 2	HW 5 Due	finding a z -score (percentile) for a given area under the standard normal curve, finding areas (percentages) under general normal distributions for a given x value, the Empirical (68-95-99.7) Rule, finding an x value (percentile) for a given area (percentage) under a general normal distribution	6.2, 6.3
8	Mon., Oct. 7		sampling error, sampling distributions of statistics, the mean and standard error of the sample mean	7.1, 7.2
	Wed., Oct. 9	HW 6 Due	sampling distribution of the sample mean, Central Limit Theorem	7.3
9	Mon., Oct. 14		point estimation of a pop'n mean, introduction to confidence intervals (CI's), interpretation of CI's, one-sample z CI for a pop'n mean when the pop'n s.d. is known, margin of error, determining the required sample size	8.1, 8.2
	Wed., Oct. 16	Exam II	properties of t -distributions (t density curves), one-sample t CI for a pop'n mean when the pop'n s.d. is unknown	8.3
10	Mon., Oct. 21		sample proportion and pop'n proportion (for summarizing qualitative data), sampling distribution of the sample proportion, one-sample z CI for a pop'n proportion, determining the required sample size	12.1
	Wed., Oct. 23	Lab 4	intro to hypothesis testing, null and alternative hypotheses, level of significance, test statistics, (<i>if time permits: Type I and II Errors</i>)	9.1
11	Mon., Oct. 28		p -values, one-sample z test for a pop'n mean when the pop'n s.d. is known, (<i>if time permits: critical value approach to hypothesis testing</i>)	9.3, 9.4, (<i>if time permits: 9.2</i>)
	Wed., Oct. 30	HW 7 Due	one-sample t test for a pop'n mean when the pop'n s.d. is unknown	9.5
12	Mon., Nov. 4		sampling distribution of the difference between two sample means, two-sample t test when the pop'n s.d.s aren't necessarily equal,	10.1, 10.3
	Wed., Nov. 6	Lab 5	(<i>if time permits: two-sample t CI for the difference between two pop'n means</i>)	10.3
13	Mon., Nov. 11	HW 8 Due	paired-samples t test difference between two pop'n means, (<i>if time permits: paired samples t CI</i>)	10.5
	Wed., Nov. 13		(<i>if time permits: one-sample z test for a pop'n proportion, sampling distribution of the difference between two sample proportions, two-sample z test and CI for difference between two pop'n proportions</i>)	(<i>if time permits: 12.2 and 12.3</i>)
14	Mon., Nov. 18	Exam III, Lab 6	bivariate data, relationships between variables, scatterplots, least squares regression, prediction	14.1, 14.2
	Wed., Nov. 20	HW 9 Due	extrapolation, influential pts, predicted values, residuals (errors), coefficient of determination	14.3, 15.1

15	Mon., Nov. 25	No Class: Fall Break		
	Wed., Nov. 27	No Class: Fall Break		
16	Mon., Dec. 2	Lab 7	correlation, properties of correlation, cautions about correlation	14.4
	Wed., Dec. 4	HW 10 Due, Final Project Due	Catch up or review	
	Mon., Dec. 9 – Sat., Dec. 14	Final Exam Week		