Lecture Topics and Readings

Topic	**Approx. Dates**	**Readings**	**Add'l Lab Readings**
Introduction	Aug. 22	Course Syllabus Ch. 1.1	Ch. 1.2-1.4 Owen, 1.1-1.8, 2.1-2.2
Univariate Categorical Data	Aug. 24	Ch. 2.1	Owen 3.1-3.3, 4.1
Univariate Numeric Data	Aug. 29, 31 Sept. 7	Ch. 2.2	Owen 5.1, 5.2
Characterizing Distributions	Sept. 12	Ch. 2.3	
Multivariate Categorical Data	Sept. 14, 19	Ch. 3.1, 4.1.1	Ch. 4.2
Grouped Numeric Data	Sept. 21	Ch. 3.2, 4.1.2	
Bivariate Numeric Data	Sept. 26, 28	Ch. 3.3, 4.1.3	
Simple Linear Regression	Oct. 3, 5	Ch. 3.4 to 3.4.3	
Catch-up and Review	Oct. 10	—	
MIDTERM EXAM	***Oct. 12***	—	
Intro to Probability	Oct. 17, 19	Notes	
Discrete Random Variables	Oct. 24, 26	Ch. 5.1.1	
The Bernoulli, Binomial and Discrete Uniform Distributions	Oct. 31	Ch. 5.2.2	Ch. 5.2.1 Owen 6.1, 6.3.1
Continuous Random Variables	Nov. 2, 7	Ch. 5.1.2	
The Normal Distribution	Nov. 9	Ch. 5.2.2	Owen 6.3.2
Random Samples	Nov. 14	Ch. 5.1.3	Owen 6.4
Sampling Distributions	Nov. 16, 21	Ch. 5.1.4	
The Central Limit Theorem	Nov. 23, 28	Ch. 5.3	
Simulation and Bootstrapping to Estimate Sampling Distributions	Nov. 30, Dec. 5	Notes	Ch. 6.1-6.3, 6.6
Catch-up and Review	Dec. 7	—	
FINAL EXAM	***Dec. 12***	—	

Lab Topics

Dates	**Topics**	**Assignment Due**
Aug. 23-24	Intro and `R` Fundamentals	—
Aug. 30-31	`R` Fundamentals Cont'd, Tables, Plotting Bar Charts, Pie Charts	1
Sept. 6-7	Summary Statistics, Stem and Leaf Plots, Strip Charts, Histograms, Density Curves	—
Sept. 13-14	Visualizing Central Tendency and Variability, Transformations, Boxplots	2
Sept. 20-21	Contingency Tables, Margin Tables, Conditional Proportion Tables	—
Sept. 27-28	Overlaid Densities, Multiple Boxplots, Summary Statistics by Group, Scatterplots	3
Oct. 4-5	Correlation, Linear Regression with `lm()`	—
Oct. 11-12	Midterm Review	—
Oct. 18-19	Prediction, Residual Plots, Probability Basics	4
Oct. 25-26	Sampling from a Population With and Without Replacement using `sample()`	5
Nov. 1-2	Computing Binomial Probabilities and Quantiles in `R`	—
Nov. 8-9	Normal Probabilities and Quantiles	6
Nov. 15-16	Sampling from a Distribution	—
Nov. 22-23	Repeated Sampling, Visualizing Distributions of Sample Statistics	7
Nov. 29-30	Approximating Sampling Distributions with the CLT and with Simulation	—
Dec. 6-7	Bootstrapping, Catch Up	8

Lab assignments are due on the Friday following the indicated session, except the last one, which is due on Wednesday (i.e., the last day of classes).

Lab Assignments and Web Quizzes

Number	Topics	Due Date
WQ 1	Course Policies	Aug. 26
Lab 1	`R` Fundamentals	Sept. 2
WQ 2	Central Tendency and Variability	Sept. 9
Lab 2	Univariate Data	Sept. 16
WQ 3	Contingency Tables	Sept. 23
WQ 4	Comparing Distributions	Sept. 28
Lab 3	Multivariate Data	Sept. 30
WQ 5	Correlation	Oct. 7
Lab 4	Correlation and Simple Linear Regression	Oct. 21
Lab 5	Probability Intro	Oct. 28
WQ 6	Discrete Distributions	Nov. 4
Lab 6	Common Distributions	Nov. 11
WQ 7	Sampling Schemes	Nov. 18
Lab 7	Sampling and Sampling Distributions	Nov. 25
WQ 8	Using the Central Limit Theorem	Dec. 2
Lab 8	Calculating Sample Probabilities	Dec. 7*

All assignments are due by midnight on the indicated day. All due dates are Fridays, except Lab Assignment 8, which is due on the last day of classes.