18.6501x Fundamentals of Statistics - Syllabus and Schedule

Unit 1. Introduction to Statistics				
Week 1 Released Tuesday: Feb 12, 2019 UTC23:59	Homework 0: Probability and Linear algebra Review Lecture 1: What is statistics Lecture 2: Probability Redux	Due on Tuesday: Feb 19, 2019 UTC23:59		
	Unit 2. Parametric Inference			
Week 2 Released Wednesday: Feb 13, 2019 UTC23:59	Lecture 3: Parametric Statistical Models Lecture 4: Parametric Estimation and Confidence Intervals Recitation 1. Confidence Intervals of the mean of Gaussian random variables Homework 1: Estimation, Confidence Interval, Modes of Convergence	Due on Tuesday: Feb 26, 2019 UTC23:59		
Week 3 Released Wednesday: Feb 20, 2019 UTC23:59	Lecture 5: Delta Method and Confidence Intervals Recitation 2 Confidence Intervals of the shift of shifted exponential random variables Homework 2. Statistical Models, Estimation, and Confidence Intervals	Due on Tuesday: March 05, 2019 UTC23:59		
Week 4 Released Wednesday: Feb 27, 2019 UTC23:59	Lecture 6: Introduction to Hypothesis Testing Lecture 7: Hypothesis Testing (Continued) Recitation 3. Introduction to Hypothesis Testing Homework 3. Introduction to Hypothesis Testing	Due on Tuesday: March 12, 2019 UTC23:59		
	Unit 3 Methods of Estimation			
Week 5 Released Wednesday: March 06, 2019 UTC23:59	Lecture 8: Distance measures between distributions Recitation 4: Distance measures between distributions Homework 4: Distance measures between distributions	Due on Tuesday: March 19, 2019 UTC23:59		
Week 6 Released Wednesday: March 13, 2019 UTC23:59	Lecture 9: Introduction to Maximum Likelihood Estimation Recitation 5: Maximum Likelihood Estimation Lecture 10: Covariance Matrices, Multivariate Statistics, and Fisher Information Homework 5: Maximum Likelihood Estimation	Due on Tuesday: March 26, 2019 UTC23:59		

Week 7 Released Wednesday: March 20, 2019 UTC23:59	Lecture 11: Maximum Likelihood Estimation (Continued) and the Method of Moments Lecture 12: M-Estimation Homework 6 Maximum Likelihood Estimation and Method of Moments	Due on Tuesday: April 02, 2019 UTC23:59		
Midterm Exam 1				
Week 8 Released Wednesday: March 27, 2019 UTC23:59	Midterm Exam 1	Due on Tuesday: April 09 , 2019 UTC23:59		

Unit 4 Hypothesis Testing				
Week 9 Released Wednesday: April 03, 2019 UTC23:59	Lecture 13: Hypothesis Testing III Recitation 6: T-test Lecture 14: Hypothesis Testing IV Homework 7	Due on Tuesday: April 16, 2019 UTC23:59		
Week 10 Released Wednesday: April 10, 2019 UTC23:59	Lecture 15: Hypothesis Testing V Lecture 16: Hypothesis Testing VI Recitation 7: Sample Kolmogorov-Smirnov test Homework 8	Due on Tuesday: April 23, 2019 UTC23:59		
Unit 5 Bayesian Statistics				
Week 11 Released Wednesday: April 17, 2019 UTC23:59	Lecture 17: Introduction to Bayesian Statistics Lecture 18: Jeffrey's Prior and Bayesian Confidence Interval Homework 9: Bayesian Statistics	Due on Tuesday: April 30, 2019 UTC23:59		

Midterm Exam 2			
Week 12 Released Wednesday: April 24, 2019 UTC23:59	Midterm Exam 2	Due on Tuesday: May 07, 2019 UTC23:59	

Unit 6 Linear Regression			
Week 13 Released Wednesday: May 01, 2019 UTC23:59	Lectures 19: Linear Regression 1 Lecture 20: Linear Regression 2 Recitation 8: Hypothesis Test for Linear Regression Recitation 9: Ridge Regression Homework 10 Linear regression	Due on Tuesday: May 14, 2019 UTC23:59	
Unit 7 Generalized Linear Model			
Week 14 Released Wednesday: May 08, 2019 UTC23:59	Lecture 21: Lectures 22: The Canonical Link Function Recitation 10: Hypothesis Test for Logistic regression Homework 11	Due on Tuesday: May 21, 2019 UTC23:59	
Final Exam			
Week 15 Released Wednesday: May 15, 2019 UTC23:59	Final Exam	Due on Tuesday: May 28, 2019 UTC23:59	