SM339 Tentative Syllabus - Spring 2023
(subject to change)

Wk	Ch.	Topic	Practice Problems	Notes
1		Introduction, Random Variables and Distributions Exploratory Data Analysis Confidence Intervals		Spring term begins Tuesday, 10 Jan Tuesday is Monday schedule
2	 0	 Hypothesis Testing What is a Statistical Model?	 Ch0: 1,9,13	No class: ML King Jr Day
3	1.1 1.2 1.3	The Simple Linear Regression Model Conditions for a Simple Linear Model Assessing Conditions	Ch1: 1,3,5 Ch1: 9,11,19,21 Ch1: 2,23*	 *(c) Make a normal QQ plot
4	1.4 1.5 4.4	Transformations Outliers and Influential Points Identifying Unusual Points in Regression	Ch1: 27acde,29 Ch1: 33,45,46 Ch4: 11	 *(c) and (h) use standardized residuals
5	2.1-2.2 2.3 2.4	Inference for Regression Slope, ANOVA Regression and Correlation Intervals for Prediction	Ch2: 3,11,15,27 Ch2: 7,21,35,37,38 Ch2: 43,47,49	
6		*Review* **6-WEEKS EXAM (Ch 0, 1, 2)**		*Academic Reserve Week*
7	3.1 3.2	Multiple Regression Assessing Multiple Regression Model	Ch3: 1,9 Ch3: 7,11ab,17*,21	No class: Washington's Birthday *Also Find 95% PI for student in (c)
8	3.3, 4.5 3.4 3.5	Comparing Two Regression Lines, Coding Categorical Variables New Predictors from Old Correlated Predictors	Ch3: 29d,32 Ch4: 13,15 Ch3: 13, 38 Ch3: 16,53*,54	 *Also find VIFs for model in (c)
9	3.6 4.2 4.3	Testing Subsets of Predictors Techniques for Choosing Variables Cross-validation	Ch3: 47 Ch4: 5,7 Ch4: 9	
10				*Spring Break*
11	5.1 5.2 5.3-5.4	Overview of ANOVA One-Way Randomized Experiment Fitting the Model, Formal Inference	Ch5: 5,15 Ch5: 21,54b,73a Ch5: 63,65	
12		*Review* **12-WEEKS EXAM (Ch 3, 4, 5)**		
13	9.1 9.1 9.2	Choosing a Logistic Regression Model Choosing a Logistic Regression Model, cont. Logistic Regression and Odds Ratios	Ch9:1,3,5,9,17,21 Ch9: 7,8,21,23	*Academic Reserve Week*
14	9.3 9.4 10.1	Assessing the Logistic Regression Model Formal Inference: Tests and Intervals Multiple Logistic Regression	Ch9: 19acd Ch9: 27,28,29 Ch10: 1	
15	10.2 10.3 10.4	Choosing, Fitting, and Interpreting Models Checking Conditions Formal Inference	Ch10: 5,11,13 Ch10: 33,34	
16		*Review*		
17		*Review* *Review and course closeout*		Spring term ends Wednesday 3 May

Textbook: STAT2: Modeling with Regression and ANOVA, 2nd edition, by Cannon et al.

Course objectives:
-- Choose, fit, assess, and use appropriate statistical regression models.
-- Employ statistical software to solve data-based problems.
-- Present statistical analysis in both a technical and non-technical format.
-- Understand and explain the limitations of statistical analysis.
-- Understand the difference between statistical significance and practical significance.

Course coordinator: Assoc. Prof. Brice Nguelifack