

STT 2640-ELEMENTARY STATISTICS --SYLLABUS

- Textbook: *Statistics* by McClave and Sincich, 12th Edition, Published by Pearson/Prentice Hall
- Prerequisites: MTH 1260 or MTH1270

Week	Section	Topics	Problems
1	All	Statistics, Data and Statistical Thinking	1.3,1.7, 1.13,1.15,1.21,1.23
	2.1	Describing Qualitative data	2.1,2.4,2.5,2.9,2.11,2.13,2.15
	2.2	Graphical Methods for Describing Quantitative data	2.22,2.23, 2.27,2.31,2.33,2.37
	2.3	Summation Notation	2.45,2.47
2	2.4	Numerical Measures of Central Tendency	2.49,2.53,2.53,2.57,2.59,2.63,2.65, 2.69
	2.5	Numerical Measures of Variability	2.76,2.77,2.81,2.83,2.85
	2.6	Interpreting the Standard Deviation	2.92,2.95,2.97,2.99,2.101,2.107
	2.7	Numerical Measures of Relative Standing	2.109,2.111,2.113,2.115,2.119,2.123
3	3.1	Events, Sample Spaces, and Probability	
	3.2	Union and Intersections	
	3.3	Complementary Events	3.1,3.3,3.5, 3.7,3.9,3.10,3.11,3.15,3.19,3.27
	3.4	The Additive Rule and Mutually Exclusive Events	3.35,3.37,3.39,3.41,3.43,3.44,3.45,3.47,3.51,3.53,3.55,3.57,3.61
	3.5	Conditional Probability	
4	3.6	The Multiplicative Rule and Independent Events	3.65,3.67,3.69,3.71,3.72,3.73,3.75,3.77,3.79, 3.83,3.87
	4.1	Two Types of Random Variables	4.1,4.2,4.3,4.5,4.7,4.9,4.13
	4.2	Probability Distributions for Discrete Random Variables	4.17,4.18,4.19,4.21,4.23,4.27,4.29,4.31
	4.3	Expected Values of Discrete Random Variables	4.37, 4.39,4.41,4.43,4.47,4.49
5	4.4	The Binomial Random Variable	4.53,4.55,4.57,4.59,4.61,4.63,4.65,4.67,4.75
	5.1	Continuous Probability Distributions	
	5.2	The Uniform Distribution	5.1, 5.3,5.5,5.9,5.11,5.13,5.17,5.19
6	5.3	The Normal Distribution	5.21,5.23,5.25,5.28,5.29,5.31,5.32,5.33,5.35,5.39,5.41,5.43,5.45
	6.1	The Concept of a Sampling Distribution	6.1,6.2,6.3,6.5,6.7
7	6.2	Properties of Sampling Distributions: Unbiasedness and Minimum Variance	6.11,6.13, 6.15, 6.18
	6.3	The Central Limit Theorem	6.21,6.23,6.27,6.29,6.31,6.35,6.37,6.43,6.45
	7.1	Identifying and Estimating the Target Parameter	
	7.2	Confidence Interval for a Population Mean: Normal (z) Statistics	7.1,7.5,7.7,7.9,7.11,7.13,7.23
	7.3	Confidence Interval for a Population Mean: Student's t-Statistics	7.27,7.29,7.31,7.32,7.35,7.37,7.41,7.43,7.47
8	8.1	The Elements of a Test of Hypothesis	
	8.2	Formulating Hypothesis and Setting Up the Rejection Region	8.1,8.3,8.7,8.8,8.9,8.10,8.11,8.16
	8.3	Test of Hypothesis about a Population Mean: Normal (z) Statistics	8.21,8.23,8.27,8.28,8.30,8.31,8.33,8.35
9	8.4	Observed Significance Levels: p-Values	8.38,8.39,8.41,8.43,8.45,8.47,8.49,8.51,8.53
	8.5	Test of Hypothesis about a Population Mean: Student's t-Statistics	8.57,8.58,8.59,8.61,8.63,8.65,8.69,8.71,8.73
10	9.1	Identifying the Target Parameter	
	9.2	Comparing Two Population Means: Independent Sampling	9.1,9.3,9.4,9.5,9.6,9.7,9.9,9.11,9.13,9.15,9.19,9.21,9.23
	9.3	Comparing Two Population Means: Paired Difference Experiments	9.30,9.31,9.32,9.33,9.35,9.37,9.39,9.41,9.45,9.49
11	10.1	Elements of a Designed Study	10.1,10.2,10.3,10.5,10.6,10.7,10.9,10.11,10.13
	10.2	The Completely Randomized Design: Single Factor	10.15,10.17,10.19,10.20,10.21,10.23,10.25,10.26,10.29,10.31,10.33
	10.3	Multiple Comparisons of Means	10.43,10.45,10.47,10.52
12	11.1	Probabilistic Models	11.1,11.4,11.5,11.9
	11.2	Fitting the Model: The Least Squares Approach	11.13,11.14,11.17,11.19,11.21,11.22,11.25
	11.3	Model Assumptions	11.34,11.35,11.41,11.43,11.45
	11.4	Assessing the Utility of the Model: Making Inferences about the Slope	11.51,11.53,11.55,11.57,11.61
	11.5	The Coefficients of Correlation and Determination	11.67,11.69,11.71,11.73,11.75,11.79,11.81
13	11.6	Using the Model for Estimation and Prediction	11.93,11.95,11.97,11.100,11.105
	11.7	A Complete Example	
	13.1	Categorical Data and The Multinomial Experiment	
	13.2	Testing Categorical Probabilities: One-Way Table	13.3,13.4,13.5,13.7,13.9,13.11,13.12,13.15
	13.3	Testing Categorical Probabilities: Two-Way (Contingency) Table	13.20,13.21,13.24,13.25,13.27,13.29,13.32,13.33,13.35
14		Wrap-up and Review	