Class #	Chapter Title/Reference Literature	Topics to be covered	% of Portion	
			% of syllabus	Cumulati
1.	**Unit: 1** **Introduction to Data Science,Statistics and Visualizing data** **T1: Chapter 1 1.2, 1.3;**	**Introduction to Data Science:** Motivating Examples and Scope. Refer DS-Intro.pdf	23.1%	23.1%
2.		**Sampling : T1:1.1** **Brief Introduction to statistics,Types of statistics** Descriptive and Inferential Statistics population sample simple random sample simple random sampling sample of convenience sampling variation. tangible populations conceptual population, Independence sampling with replacement. Sampling Methods:weighted sampling stratified random sampling cluster sampling Types of Data numerical or quantitative categorical or qualitative Controlled Experiments and Observational Studies Sampling methods.(1.1)(Excluding Types of experiments)		
3.		Sampling methods.(1.1)		
4.		Sampling errors.(Handout)		
5.		**Getting and Analyzing Data:** Scraping the Web,Reading Files, (Handout)		
6.		Need for Data Cleaning,Basics of Data Cleaning.(Handout)		
7.		Summary Statistics(1.2)		
8.		**Summary Statistics (cont) (1.2)** The Sample Mean The Standard Deviation the sample variance Outliers The Sample Median The Trimmed Mean The Mode and the Range Quartiles		

		Percentiles Summary Statistics for Categorical Data Sample Statistics and Population Parameters		
9.		**Data Visualization and Interpretation : Graphical summaries**-Histogram.(1.3) ,Unequal Class Widths,Symmetry and Skewness,Unimodal and Bimodal Histograms		
10.		Visualizing Data: Bar Charts(1.3)(Handout)		
11.		Visualizing Data: Multivariate Data,two variables (scatter plots)(1.3)		
12.		Good vs. Bad Visualization.(Handout)		
13.	**Unit: 2** **Random Variables and Probability Distributions** **T1: Chapter 2 2.4 – 2.5, Chapter 4 4.1 – 4.3, 4.5**	**Random Variables** : Introduction,Discrete Random Variables(2.4) The Cumulative Distribution Function of a Discrete Random Variable,Mean and Variance for Discrete Random Variables,The Probability Histogram	19.23%	42.33%
14.		Continuous Random Variables(2.4), Computing Probabilities with the Probability Density Function, The Cumulative Distribution Function of a Continuous Random Variable		
15.		Continuous Random Variables(2.4) **Contd.** **Mean and Variance for Continuous Random Variables,** **The Population Median and Percentiles,**		
16.		Linear Functions of Random Variables.(2.5) Adding a Constant Multiplying by a Constant Means of Linear Combinations of Random Variables		
17.		Linear Functions of Random Variables.(2.5) Independent Random Variables Variances of Linear Combinations of Independent Random Variables Independence and Simple Random Samples The Mean and Variance of a Sample Mean		
18.		**Probability Distributions: The** Bernoulli Distribution(4.1),Mean and Variance of a Bernoulli Random Variable The Binomial Distribution(4.2) Probability Mass Function of a Binomial Random Variable		

		A Binomial Random Variable Is a Sum of Bernoulli Random Variables The Mean and Variance of a Binomial Random Variable Using a Sample Proportion to Estimate a Success Probability Uncertainty in the Sample Proportion		
19.		The Poisson Distribution(4.3) The Mean and Variance of a Poisson Random Variable Using the Poisson Distribution to Estimate a Rate Uncertainty in the Estimated Rate		
20.		The Normal Distribution(4.5), Estimating the Parameters of a Normal Distribution Linear Functions of Normal Random Variables Linear Combinations of Independent Normal Random Variables How Can I Tell Whether My Data Come from a Normal Population? Chebyshev's inequality(2.4)		
21.		Derivation of mean and variance of Bernoulli and Binomial Distribution(Handout)		