

	Topic	Confidence with this
	Representation & Summary of Data	topic
Intro of Data	Data = Observation = Variable	☺ ☹ ☹
	Discrete & Continuous Data	☺ ☹ ☹
	Quantitative & Qualitative Data	☺ ☹ ☹
	Mean, Median, Mode (Quartiles)	☺ ☹ ☹
Measures of Location	Including discrete, continuous, grouped and ungrouped data	☺ ☹ ☹
	$\bar{x} = \frac{\sum x}{n} \text{ or } \frac{\sum fx}{\sum f}$	
	Understanding and use of coding	☺ ☹ ☹
Measures of Dispersion	Range & Percentile ranges	☺ ☹ ☹
	Cumulative Frequency Polygons	☺ ☹ ☹
	Variance & Standard Deviation	☺ ☹ ☹
	$\sigma^2 = \frac{\sum x^2}{n} - \bar{x}^2$	
	or $\frac{\sum fx^2}{\sum f} - \bar{x}^2$	
	Simple Interpolation	☺ ☹ ☹
Skewness	Concept & Definition of Skewness	☺ ☹ ☹
	Symmetrical, Positive, Negative Distributions	☺ ☹ ☹
Outliers	Concept of outliers	☺ ☹ ☹
Histograms	Frequency = Area	☺ ☹ ☹
Stem & Leaf	Frequency density = Frequency/Class Width	☺ ☹ ☹
Box Plots		☺ ☹ ☹
	Correlation & Regression	
Correlation	Product-moment correlation coefficient:	☺ ☹ ☹
	Its use, interpretation and limitations	☺ ☹ ☹
Scatter Diagrams	Variables: Explanatory (independent) variables and Response (dependent) variables	☺ ☹ ☹
	Straight-line law: $y = bx + a$	☺ ☹ ☹
	Linear regression model :	☺ ☹ ☹
Linear Regression	$y_i = \alpha + \beta x_i + \varepsilon_i$	☺ ☹ ☹
	The least square regression line: $y = a + bx$, where	☺ ☹ ☹
	$b = \frac{S_{xy}}{S_{xx}}, a = \bar{y} - b \bar{x}$	
	Applications & Interpretations:	☺ ☹ ☹

	Interpolation and extrapolation	☺ ☹ ☹
	Probability	
Set Notations	Use of standard formulae	☺ ☹ ☹
Probability	Exclusive events	☺ ☹ ☹
Introduction	Complementary events	☺ ☹ ☹
	$P(A') = 1 - P(A)$ $P(A \cup B) = P(A) + P(B) - P(A \cap B)$	
	Independent events	☺ ☹ ☹
	$P(A \cap B) = P(A) P(B)$	
Probability	Tree diagrams	☺ ☹ ☹
	Conditional probability	☺ ☹ ☹
Probability	Solving Probability problems	☺ ☹ ☹
	Discrete Random Variables	
Discrete Random Variables	Concept of random variables	☺ ☹ ☹
	The probability function:	☺ ☹ ☹
	Use of $p(x)$ where $p(x) = P(X = x)$	
	The cumulative distribution function:	
	$F(x_0) = P(X \leq x_0) = \sum_{x < x_0} p(x)$	☺ ☹ ☹
Mean & Variance	Calculating the mean – $E(X)$	☺ ☹ ☹
	The use of $E(X)$ and $E(X^2)$ to calculate the variance – $\text{Var}(X)$	
(Expectation Algebra)	Knowledge and use of	
	$E(aX + b) = aE(X) + b$	☺ ☹ ☹
	$\text{Var}(aX + b) = a^2 \text{Var}(x)$	
Discrete Uniform Distribution	Each event is equally likely to occur.	
	The mean and the variance of this distribution	☺ ☹ ☹
	The Normal Distribution	
Normal	Properties of Normal Distribution:	☺ ☹ ☹
Distribution	Shape of a Normal Distribution curve	☺ ☹ ☹
	Symmetrical about μ	☺ ☹ ☹
	Mode = Mean = Median	☺ ☹ ☹
	Total area under the curve = 1	☺ ☹ ☹
	The Standard Normal Distribution	☺ ☹ ☹
	The use of its table	☺ ☹ ☹