Probability and Statistics (PHM111s)

Course Specifications

1. Basic Information

PHM111s	**Probability and Statistics**	**2 CH**
Prerequisites	**PHM 013 - Mathematics (2)**	

Number of weekly Contact Hours		
Lecture	Tutorial	Laboratory
2 H	2 H	0

Course Content
Review on Probability, Bayes' Theorem, Random Variables (Continuous and Discrete), Probability Distributions, Data Description, Descriptive and Inferential Statistics, Measures of Central Tendency and Dispersion.

Used in Program / Level	
Program Name or requirement **All Engineering Programs**	Study Level
Faculty Requirements	**1**

Assessment Criteria			
Student Activities	Mid-Term Exam	Practical Exam	Final Exam
20 %	**20 %**	**0 %**	**60 %**
Exam Duration [Hours]	**1 H**		**3 H**

2. List of References

a. Essential books (text book)

- Allan G. Bluman, " Elementary Statistics: A Step by Step Approach, Seventh Edition", McGraw-Hill, 2012- **ISBN** 978–0–07–353497–8 — **ISBN** 0–07–353497–8

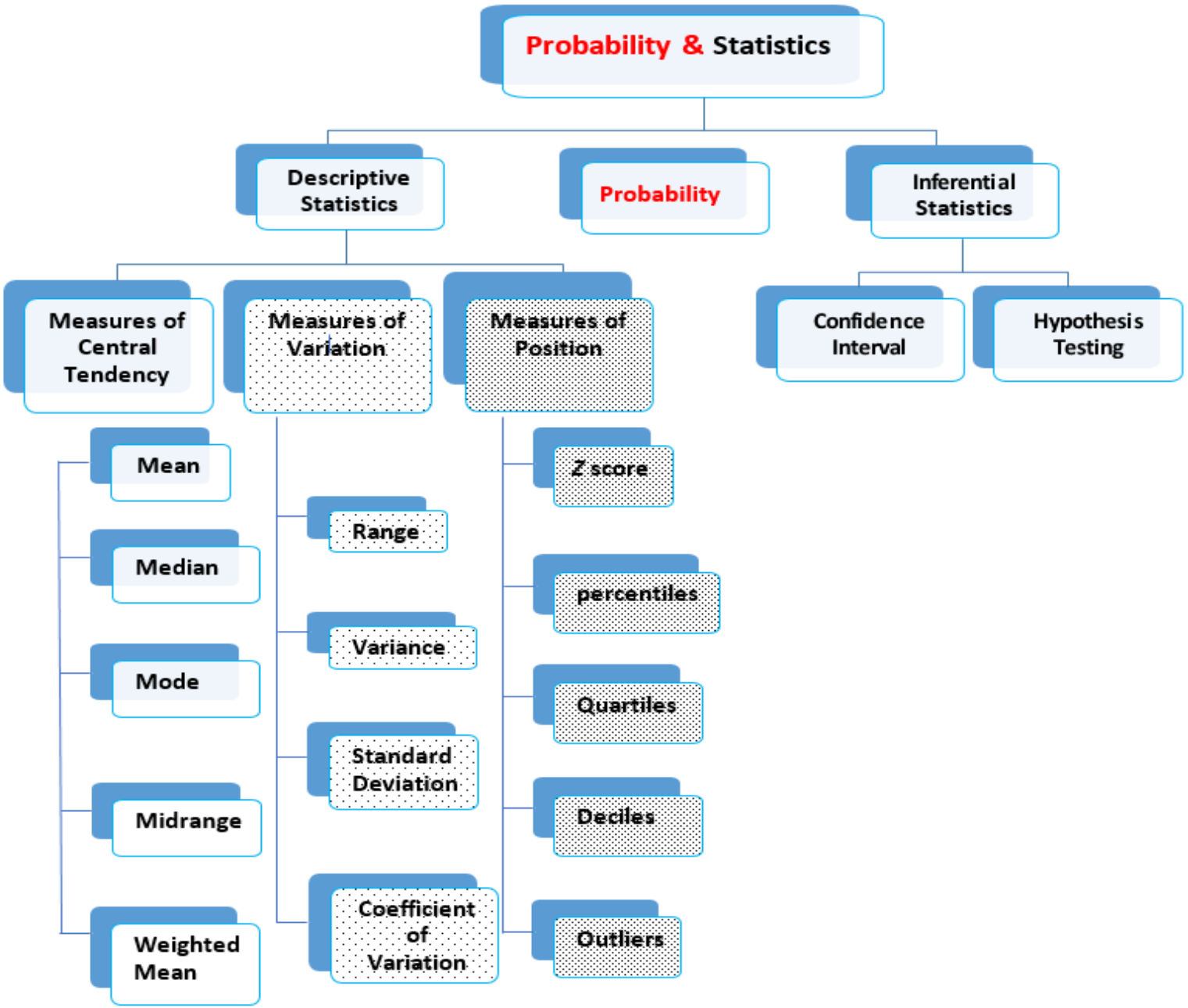
b. Recommended books

- Ronald E. Walpole, Raymond H. Myers, Sharon L. Myers, Keying Ye, "Probability & Statistics for Engineers & Scientists", Prentice Hall, 2012- **ISBN** 978-0-321-62911-1

- Douglas C. Montgomery, George C. Runger, "Applied Statistics and Probability for Engineers", Wiely, sixth Ed., 2014. (EKB) - **ISBN**: 978-1-118-74412-3.

- Sheldon Ross, "A FIRST COURSE IN PROBABILITY", Prentice Hall, Eighth Ed., 2010.

c. Lecture Notes & Lecture Slides


Probability & Statistics
Descriptive Statistics
Probability
Inferential Statistics
Measures of Central Tendency
Measures of Variation
Measures of Position
Confidence Interval
Hypothesis Testing
Mean
Median
Mode
Midrange
Weighted Mean
Range
Variance
Standard Deviation
Coefficient of Variation
Z score
percentiles
Quartiles
Deciles
Outliers

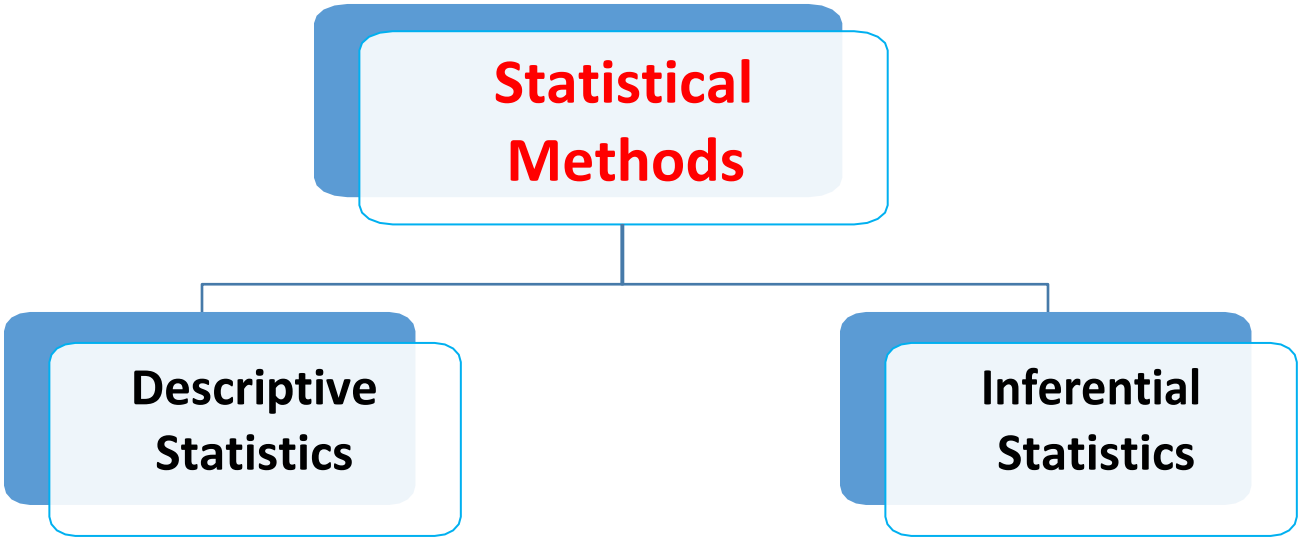
Probability and Statistics

Part I: Introduction to Statistical Methods.

Part II: Methods of Descriptive Statistics.

Part III: Introduction to Probability.

Part IV: Methods of Inferential Statistics.



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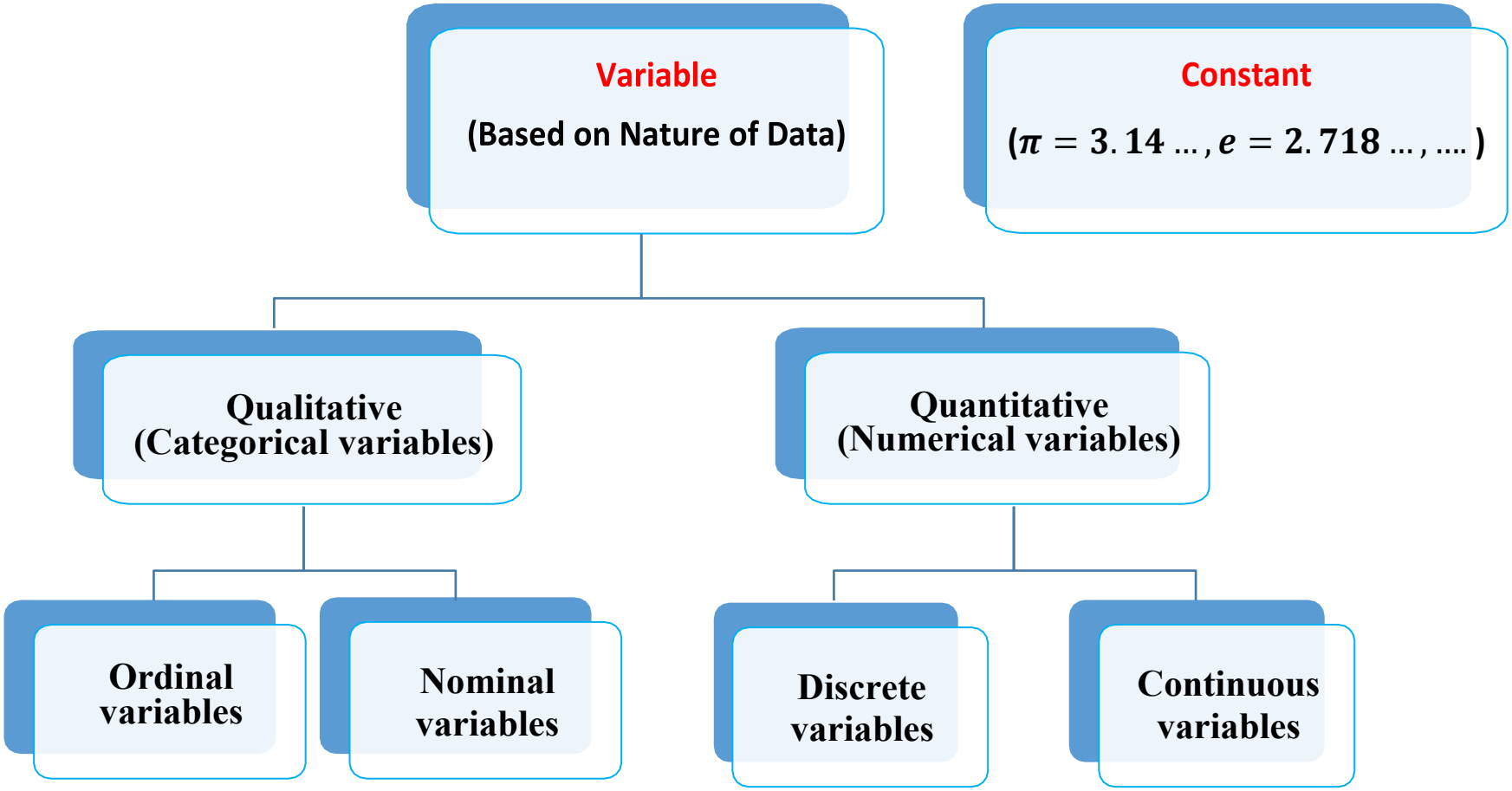
Describe a data set with summary tables, charts, graphs, ….

Draw a conclusion about a population based on your sample.

Is a group of subjects selected from a population.

Consists of all subjects that are being studied.

Types of Data



Part I: **Introduction to Statistical Methods.**

Part II: **Methods of Descriptive Statistics.**

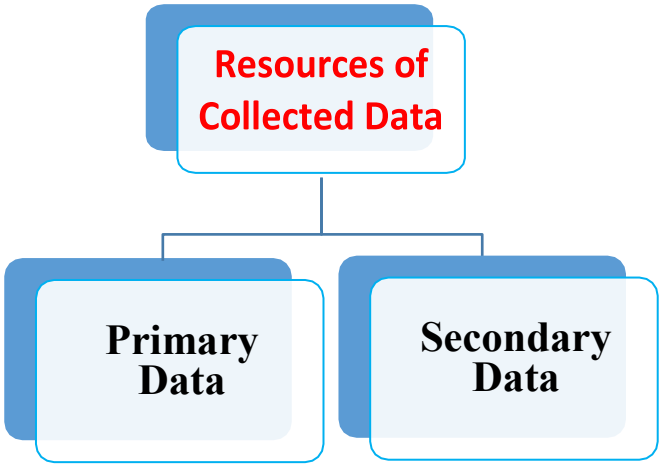
1-Collecting Data.
2-Organizing Data.
3-Presenting Data.
4-Summarizing Data.

Part III: **Introduction to Probability.**

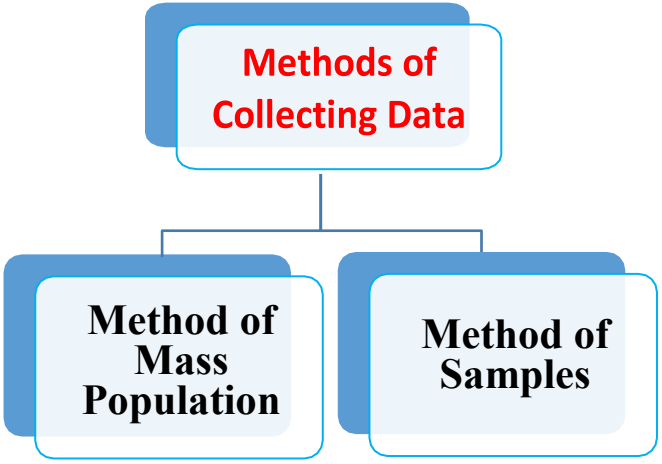
Part IV: **Methods of Inferential Statistics.**

1-Collecting Data.

A) Resources of Collected Data:

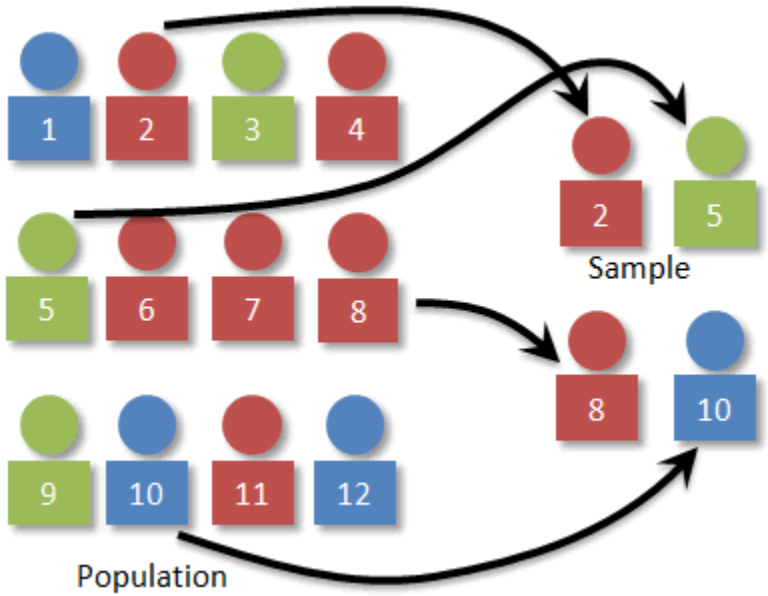


B) Methods of Collecting Data:

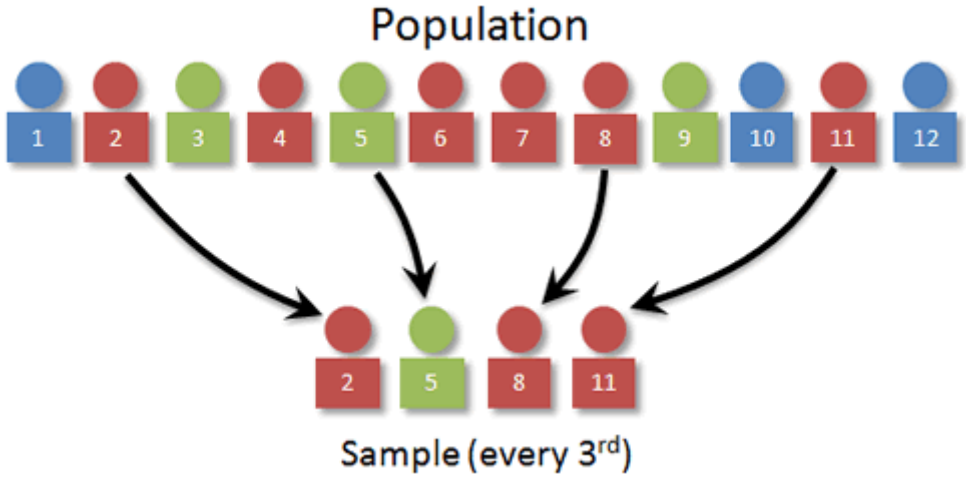


Methods of Samples:

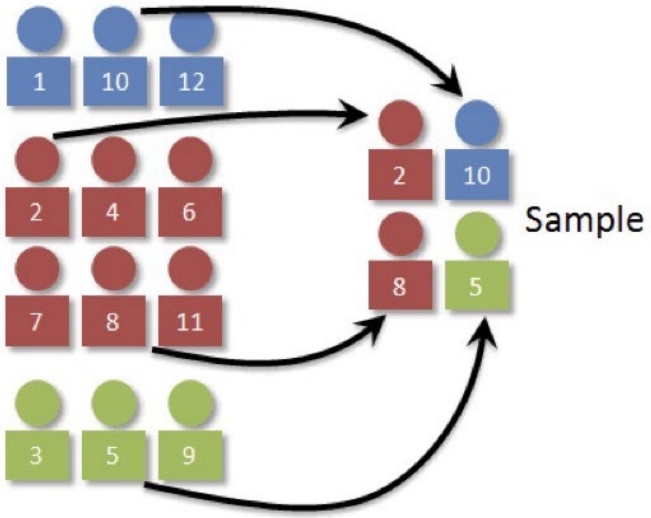
- **Random**



- **Systematic**



- **Stratified**



- **Cluster**