



**MANNAR THIRUMALAI NAICKER COLLEGE (Autonomous)(SFW)**  
**DEPARTMENT OF MATHEMATICS with CA**  
**(Add on Course)**

**Class : B.Sc Mathematics (CA)**  
**Semester : I & II**  
**Subject Code : 18UMCVA1**

**Hours : 45 hrs.**  
**Credits : 1**

**GRAPH THEORY- Introductory Concepts**

**Unit –I**

Graphs- Introduction to Graphs- Definition and examples - Degrees – Subgraphs .

**Unit –II**

Independent sets and coverings - Operations on graphs.

**Unit –III**

Connectedness – Walks, Trails and Paths.

**Unit –IV**

Trees – Introduction -Characterisation of Trees – Centre of a Tree.

**Unit –V**

Colourability – five color theorem – four color theorem

**Text Book:**

Dr.S.Arumugam and S.Ramachandran, **Invitation To Graph Theory**, Scitech Publication, Chennai, 2015. Reprint May 2017.

**Reference Book:**

1. F. Harary, Graph Theory, Addison-Wesley, Reading, Mass, 1972.
2. J.A. Bondy and U.S.R. Murty, Graph Theory with applications, North Holland, New York. 1976.

Unit I - Chapter 2: Sections 2.1 to 2.3

Unit II - Chapter 2: Sections 2.6 , 2.9

Unit III- Chapter 4: Sections 4.1

Unit IV- Chapter 6 : Sections 6.0 to 6.2

Unit V - Chapter 9 : Sections 9.2 , 9.3.



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**Class : B.Sc Mathematics (CA)**

**Hours : 45hrs**

**Semester : V & VI**

**Credits : 1**

**Subject Code : 18UMCVA2**

**A Guide ToLaTex**

**Unit –I**

Basics – Introduction - Basics of a LATEX file -Command names and arguments –  
Declarations - Special characters - Word division

**Unit –II**

Document Layout and Organization -Document class- Page style - Parts of the  
Document - Table of contents

**Unit –III**

Displayed Text - Changing font - Centering and indenting - Lists - Generalized lists –  
Theorem-like declarations

**Unit –IV**

Mathematical Formulas -- Mathematical environments - Main elements of math mode -  
Mathematical symbols - Additional elements - Fine-tuning mathematics - Beyond  
standard LATEX .

**Unit –V**

Graphics Inclusion and Color -- The graphics packages - Adding color – Slide  
Preparation - Slide production with seminar –slide for paper presentation – Beamer  
package.

**Text Book:**

H. Kopka and P.W. Dally, A Guide to LATEX, Third Edition, Addison Wesley, Harlow,  
1999.

Unit I - Chapter 1 : Section 1.5

Chapter 2 : Sections 2.1,2.3,2.5,2.8

Unit II - Chapter 3 (Full)

Unit III - Chapter 4 (Full)

Unit IV - Chapter 5 (Full)

Unit V- Chapter 6 & Chapter 15 (Full)



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**Class : B.Sc Mathematics (CA)**  
**Semester : I & II**  
**Subject Code : 18UMCVA3**

**Hours : 45 hrs.**  
**Credits : 1**

**Mathematical Statistics**

**Unit –I**

Test of significance based on t- distribution

**Unit –II**

Test of significance based on F- distribution

**Unit –III**

Test based on  $\chi^2$ - distribution

**Unit –IV**

Analysis of Variance– One criterion of classification

**Unit –V**

Analysis of Variance– Two criteria of classification

**Text Book:** Dr.S.Arumugam and Mr. A. Thangapandi Issac, **Statistics**, New Gamma Publishing House, Palayamkottai. Reprint July 2016.

**Reference Book:**

1. Bensal A (2017). **Survey Sampling**, Narosa Publishing House Pvt. Ltd.
2. Gupta A K and Kabe D G (2011), **Theory of Sample Surveys**, World Scientific.
3. Saxena, H.C. (1983). **Elementary Statistics**. S. Chand & Co., New Delhi.

Unit I - Chapter 15 : Sections 15.1 & 15.3

Unit II - Chapter 15 : Section 15.2

Unit III - Chapter 16 : Sections 16.1 to 16.3

Unit IV - Chapter 17 : Section 17.1

Unit V - Chapter 17 : Section 17.2