

FACULTY OF SCIENCE
DEPARTMENT OF MATHEMATICS

SMATVAC02 - ESSENTIAL SKILLS IN MATHEMATICS

Learning Objective (LO):

To train the students to develop problem solving techniques.

To introduce measures of central tendency, dispersion and solving simple problems.

Course Outcome:

By the end of the course, students will be able solve Mathematical problems easily.

Unit-I: Matrices:

Types of Matrices – Addition, Subtraction and Multiplication of matrices – Transpose of a matrix.

Unit-II: Theory of Equations:

Fundamental Theorem of Algebra – Relation between roots and coefficients of equation – Diminish the roots of an equation – Simple problems.

Unit-III: Algebra:

Fractions – Rational fractions, Partial fractions – Resolving into partial fractions – Three distinct cases of resolution into partial fractions – Simple problems.

Unit-IV: Theory of Numbers:

Division Algorithms – G. C. D – Euclidean algorithm – L. C. M _ Prime numbers – Composite numbers – Divisors of a positive integer – Simple Problems

Unit-V: Fundamentals of Statistics:

Measures of central tendency - Measures of dispersion: range, standard deviation, variance- Quartile deviation – Mean deviation.

Text Book:

Unit I: Chapter III: Ancillary Mathematics, Volume-I, S. Narayanan, R. Hanumantha Rao, T.K. Manicavachagom Pillay and Dr. P. Kandaswamy, S. Viswanathan (Printers & Publishers) Pvt. Ltd., 2009.

Unit II: Chapter I - Allied Mathematics, P. Kandasamy and K. Thilagavathi, S. Chand & Company Limited, New Delhi, 2003.

Unit III: Chapter I - Allied Mathematics, Dr. M. K. Venkataraman,, Mrs. Manorama Sridhar, Page 1.2 – 1.18, Agasthiar Publications, Trichy, 2015.

Unit IV: Chapter I - Mathematics for B. Sc. Branch – 1, Vol – II, P. Kandasamy and K. Thilagavathi,, Page 186 – 200, S. Chand & Company Limited, New Delhi, 2004.

Unit V: Chapter II - Fundamentals of Mathematical Statistics, S. C. Gupta and V. K. Kapoor, Page 2.8 – 2.23 , 2.33 – 2.40, Sultan Chand Sons, New Delhi, 2020.

Supplementary Reading:

1. Introduction to Matrix Analysis, Richard Bellman, Second Edition, T.M.G. Publishing Company Ltd., New Delhi, 1970.
2. Algebra – Volume II, T. K. Manickavachagam Pillay, T. Natarajan, K. S. Ganapathy, S. Viswanathan (Printers & Publishers) Pvt. Ltd., 2009.