

PRE-REQUISITE

Intermediate: F.A/ F.Sc. / I.Com or equivalent

LEARNING OUTCOMES:

1. Use concepts and apply techniques to the solution of problems in algebra and modeling, measurement, financial mathematics, data and statistics, and probability
2. Use mathematical skills and techniques, aided by appropriate technology, to organise information and interpret practical situations
3. Interpret and communicate mathematics in a variety of written and verbal forms, including diagrams and statistical graphs.

CONTENTS

This course is designed to promote the development of knowledge, skills and understanding in areas of mathematics that have direct application to the broad range of human activity. Students will learn to use a range of techniques and tools, in order to develop solutions to a wide variety of problems relating to their present and future needs and aspirations.

Module-1 Whole Numbers:

Reading and writing whole numbers, addition of whole numbers, subtraction of whole numbers, multiplication of whole numbers, division of whole numbers, long division, rounding whole numbers, roots and order of operations, Solving application problems.

Module-2 Multiplying and Dividing Fractions:

Basics of fractions, mixed numbers, factors, multiplication of fractions, applications of multiplication, dividing fractions, multiplication and division of mixed numbers

Module-3 Adding and Subtracting Fractions:

Adding and subtracting like fractions, Least common multiples, adding and subtracting unlike fractions, adding and subtracting mixed numbers, order relations and the order of operations.

Module-4 Decimals:

Reading and writing decimal, rounding decimals, adding decimals, subtracting decimals, multiplying decimals, dividing decimals, writing fractions as decimals.

Module-5 Ratio, Proportion and Percent:

Ratios, rates, proportions, and applications of proportions. Basics of percent, percents and fractions, The percent proportion, Identifying the parts in a percent problem, using proportions to solve percent problems, The percent equation, applications of percent, compound Interest.

Module-6 Measurement:

The English system, The metric system—length, The metric system--capacity and weight (mass), Applications of metric measurement, metric-English conversions and temperature.

Module-7 Geometry:

Basic geometric terms, angles and their relationships, Rectangles and squares, Parallelograms and trapezoids, triangles, circles, volume, Pythagorean theorem, similar triangles.

Module-8 Basic Algebra:

Signed numbers, addition and subtraction of signed numbers, order of operations, evaluating expressions and formulas, solving equations, solving equations with several steps, applications.

ASSIGNMENTS – TYPE AND NUMBER WITH CALENDAR

It is continuous assessment. The weightage of Assignments will be 25% before and after mid term assessment. It includes:

- classroom participation,
- attendance, assignments and presentation,
- homework
- attitude and behavior,
- hands-on-activities,
- short tests, quizzes etc.

ASSESSMENT AND EXAMINATIONS:

Sr. No.	Elements	Weightage	Details
1.	Mid Term Assessment	35%	It takes place at the mid-point of the semester
2.	Formative Assessment	25%	It is continuous assessment. It includes: classroom participation, attendance, assignments and presentation, homework, attitude and behavior, hands-on-activities, short tests, quizzes etc.
3.	Final Assessment	40%	It takes place at the end of the semester. It is mostly in the form of a test, but owing to the nature of the course the teacher may assess their students based on term paper, research proposal development, field work and report writing etc.

RECOMMENDED TEXT BOOKS/ SUGGESTED READINGS:

1. Anton, H. 2000, Calculus with analytical Geometry, 5th Ed., John Wiley & Sons, Reprint National Book Foundation.
2. Frank S. Budnick: Applied Mathematics for Business Economics and Social Sciences
3. Bowen: Mathematics with Applications in Management and Economic
4. Mircea, P. (2016). The best writing on mathematics.
5. Pitici, M., & Mumford, D. (2011). *The best writing on mathematics 2011* (Vol. 1). Princeton University Press.