

Semester V

Basic Mathematics (Open Course)

CODE: MM 1551.3

Instructional hours per week: 3 No. of Credits: 2

This course is specifically designed for those students who might have not undergone a mathematics course beyond their secondary school curriculum. The structure of the course is so as to give an exposure to the basic mathematics tools which found a use in day today life, say in the fields general finance and basic sciences.

Module I : Basic arithmetic of whole numbers, fractions and decimals (24 hours)

Place Value of numbers, standard Notation and Expanded Notation, Operations on whole numbers : exponentiation, square roots, order of operations, computing averages, rounding, estimation, applications of estimation, estimating product of numbers by round- ing, exponents, square roots, order of operations, computing averages; Fractions: multiplication and division of fractions, applications, primes and compos- ites, factorization, simplifying fractions to lowest terms, multiplication of fractions, recip- rocal of fractions, division of fractions, operations of mixed fractions, LCM,Decimal notation and rounding of numbers, fractions to decimals, multiplication of decimals, division of decimals, order of operations involving decimals,Scientific notation of numbers, operations in scientific notations, square and cube roots of numbers, laws of exponents and logarithms

The topics to be discussed in this module can be found in chapters 1–3 of text [1] and chapters 1 and 2 of text [2] below.

Module II - Ratios, proportions, percents and the relation among them (15 hours)

Ratio and proportions : Simplifying ratios to lowest terms, ratios of mixed numbers, unit rates and cost, ratios and proportion, similar figures;
Percents: Fractions - decimals - percents, converting between these three relation with proportions, equations involving percents, increase and decrease in percent, finding simple and compound interests

The topics to be discussed in this module can be found in chapters 4, 5 of text [1] below.

Module III – Basic Statistics, Simple Equations(15 hours)

Basic Statistics : Data and tables, various graphs like bar graphs, pictographs, line graphs, frequency distributions and histograms, circle graphs (pie charts), interpreting them, circle graphs and percents, mean, median, mode, weighted mean Solving simple equations, quadratic equations (real roots only), cubic equations, arith- metic geometric series, systems of two and three equations, matrices and system of equations

The topicstobediscussedinthismodulecanbefoundinchapters9oftext[1]andchapters 2, 3 of text [2] below.

Texts

Text 1 – J Miller, M O’Neil, N Hyde. *Basic College Mathematics*, 2nd Edition, McGraw Hill Higher Education

Text 2 – Steven T Karris. *Mathematics for Business, Science and Technology*, 2nd Edition, Orchard Publications

References

Ref. 1 – Charles P McKeague. *Basic Mathematics*, 7th Edition, Cengage Learning