First degree Programme in Mathematics
Course Outcome

Semester 1

Methods of Mathematics

Course code MM 1141

Co 1 Students understand basic property of Natural numbers and are able to do problems themselves

Co2 Students learn and understand Theory of Numbers

Co3 Gained practice in writing algebraic proofs

Co4 They enrich their knowledge about conics and functions of two variables and their graphs

Co5 They are also thorough with basic differentiation of real valued functions

Instructional hours per week -4

Credits -4

Semester 2

Foundations of Mathematics

Course code MM1221

Co1 Students are thorough with concepts like Congruences, Equivalence classes.

Co2 Prepared to apply the notion of Number Theory to Real world problems.

Co3 Enrich their knowledge in calculus like how derivative of a function can be used to visualize graph of a function

Co4 Introduced to Astronomy through polar equations

Co5 Enhance knowledge in Analytic geometry and Calculus started in First semester

Instructional hours per week-4

Number of credits-3

Semester 3

Algebra and Calculus I

Course code MM1341

Co1 Students are introduced to the part of Mathematics called Abstract Algebra.

Co2 They study about concepts like Ring, Fields which are generalizations of Number systems.

Co3 They enrich their knowledge in Analytic geometry such as drawing of graphs using 3D software's like GUNPLOT

Co4 Calculus of Vector valued functions

Co5 Students enrich their knowledge in equations of surfaces and curves in three dimension

Instructional hours per week-5

Number of credits-4

Semester 4

Algebra and Calculus II

Course code MM1441

Co1 Students are introduced to the Polynomials over a commutative Ring

Co2 Euler's real version of Fundamental theorem of Algebra.

Co3 They also enrich their knowledge in functions of two variable their limits and continuity,

Co4 Directional derivative tangent planes

Co5 Calculus of functions of two variables

Instructional hours per week-5

Number of credits-4

Semester 5

Real Analysis I

Course code MM1541

Co1 Students are introduced to a new part of Mathematics which creates a strong base of Real numbers.

Co2 They learn the geometric al considerations and then deduce algebraically from the axioms of real numbers as a complete ordered field both in terms of physical necessity and mathematical unity

Co3 The dialectic between practical utility and logical rigor in general and with in Mathematics

Co4 Between geometric intuition and algebraic formalism

Co5 Enrich their knowledge of real number system

Instructional hours per week-4

Number of credits-3

Complex Analysis I

Course code MM 1542

Co1 After this course the students are thorough with the properties of Complex numbers

Co2 Extend the notion of differentiation and integration to complex functions

Co3 Students learn about Complex Functions

Co4 The difference between a polynomial function and complex function

Co5 Important concepts like Analyticity etc…

Instructional hours per week-4

Number of credits-3

Differential equations

 Course code MM1543

Co1 Students extends their notion of differential equations to various physical problems

Co2methods to solve first order equations and second order linear equations

Co3 Students able to frame a real world problem in to a differential equation and solve it

Co4 They enrich their knowledge about second order linear differential equations

Co5 Exact differential equations and their applications

Instructional hours per week-4

Number of credits-3

Vector Analysis

Course code MM1544

Co1 Students learn advanced part s of vector calculus.

Co2 They also learn important theorems like gauss, Stokes, and Greens theorems.

Co3 The physical motivation and interpretation of various mathematical concepts

Co4 functions of several variables

Co5 divergence, curl are study in detail

Instructional hours per week-4

Number of credits-3

Abstract Algebra I

Course code MM 1545

Co1 Students study the concepts which are introduced in sem 4 rigorously.

Co2 They also study the basics of Abstract group theory.

Co3 They are prepared to write proofs and do problems themselves

Co4 Isomorphism and binary structures they study in detail

Co5 They study about finitely generated Abelian groups

Instructional hours per week-5

Number of credits-4

Business Mathematics (Open Course)

Course code MM 1551.2

This is an open course offered by the department

Co1 After this course students enrich their basic intermediatory Mathematics and statistics skills.
Co2 They are introduced to types of SI, CI

CO3 Basic Calculus

Co4 Index numbers

Co5 The basic Mathematics of Finance

Instructional hours per week-3

Number of credits-2

Semester 6

Real Analysis II   - MM1641

Co1 Students enrich their knowledge which they acquired through Real Analysis I in Sem 5 the History of Calculus they study through

Co2 Continuity,

Co3 Differentiability

Co4 Riemann integrability

Co5 Development of Calculus

Instructional hours per week-5

Number of credits-4

Linear Algebra MM1642

Co1 After this course they are thorough with the basics of Linear algebra

Co2 Matrix theory with emphasis on geometrical aspects

Co3 Analytic geometry of two dimension

Co4 Theory of 2X2 matrices under unified theme of linear transformations

Co5 The concepts discussed above are generalized to arbitrary dimensions

Instructional hours per week-4

Number of credits-3

Complex Analysis II MM1643

Co1 After this course they are thorough with the basics of Linear algebra

Co2 Matrix theory with emphasis on geometrical aspects

Co3 Analytic geometry of two dimension

Co4 Theory of 2X2 matrices under unified theme of linear transformations

Co5 The concepts discussed above are generalized to arbitrary dimensions

Instructional hours per week-4

Number of credits-3

Abstract Algebra II MM 1644

Co1 After this course students enrich their notion of group theory

Co2 basics of Ring theory with due emphasis on problem solving

Co3 Homomorphism of groups and factor groups

Co4 Homomorphisms and factor Rings

Co5 Normal subgroup and Fields

Instructional hours per week-4

Number of credits-3

Computer Programming MM1645

Co1 Students are thorough with document preparation in computers using LATEX.

Co2 The basics of Computer programming using PYTHON.

Co3 Basic Unix commands and Python

Co4 Linux directory structure

Co5 Computer programming

Instructional hours per week-5

Number of credits-4

Graph Theory (Elective) MM 1661.1

Co1 After this course a student attains an awareness of some of the fundamental concepts of Graph theory and to develop better understanding of the subject so as to use these ideas skillfully in solving real world problems.

Co2 Students learn the history of graph theory, Konigsberg bridge problem

Co3 Application graph theory through Puzzle with multi colored cubes

Co4 Euler's polyhedral formula

Co5 Kuratowskis graphs and their importance

Instructional hours per week-3

Number of credits-3