

COURSE OUTCOME B.Sc. Mathematics MAT-100 Foundational Mathematics (MAJOR COURSE)	
At the end of this Course, student will have developed the ability to:	
CO - 1	Infer the truth of various sentences and its equivalents and outline various properties of sets.
CO - 2	Examine and Identify the types of relations and functions.
CO - 3	Make use of the strong and weak induction.
CO - 4	Solve systems of linear equations.
CO - 5	Discuss the properties of determinants.

COURSE OUTCOME B.Sc. Mathematics MAT-111 Elementary Mathematics (MINOR COURSE)	
At the end of this Course, student will have developed the ability to:	
CO - 1	Identify the truth and falsity of a statement.
CO - 2	Comprehend the concept of Sets, Relations, and Functions.
CO - 3	Evaluate basic limits, Identify discontinuous functions, and Apply the techniques of differentiation.
CO - 4	Construct the polar form of complex numbers.
CO - 5	Compute the gradient, curl, and divergence.
CO - 6	Formulate and Solve differential equations.

COURSE OUTCOME B.Sc. Mathematics MAT-112 Elementary Statistics (MINOR COURSE)	
At the end of this Course, student will have developed the ability to:	
CO - 1	Interpret data and graphically represent it.
CO - 2	Calculate measures of central tendencies and variations.
CO - 3	Analyze correlation and regression.
CO - 4	Solve problems in Probability theory.
CO - 5	Understand different data sampling techniques.
CO - 6	Apply statistical quality control.

COURSE OUTCOME B.Sc. Mathematics MAT-131 Mathematical Techniques in Competitive Exams (MULTIDISCIPLINARY COURSE)	
At the end of this Course, student will have developed the ability to:	
CO - 1	Apply mathematical techniques in solving problems.
CO - 2	Identify tricks in solving problems quickly.
CO - 3	Employ various strategies to solve problems arising in various competitive exams.
CO - 4	Manage time in answering several questions appearing in the exam.

COURSE OUTCOME B.Sc. Mathematics MAT-132 Descriptive Statistics (MULTIDISCIPLINARY COURSE)	
At the end of this Course, student will have developed the ability to:	
CO - 1	Understand concepts of sample v/s. population and Identify different types of scales.
CO - 2	Distinguish between primary and secondary data and Organize the Statistical data.
CO - 3	Calculate measures of central tendencies and variations.
CO - 4	Interpret correlation and regression.

COURSE OUTCOME B.Sc. Mathematics MAT-141 Numerical Analysis using Python/SageMath (SKILL ENHANCEMENT COURSE)	
At the end of this Course, student will have developed the ability to:	
CO - 1	Find the roots of algebraic and transcendental equations.
CO - 2	Apply Interpolation to solve real life problems.
CO - 3	Make use of the techniques of numerical differentiation and integration.
CO - 4	Determine the best line/quadratic curve/exponential curve to fit the give data.
CO - 5	Utilize Python/SageMath software to aid mathematical pursuits.

COURSE OUTCOME B.Sc. Mathematics MAT-142 Statistical Methods using R/SPSS/PSPP (SKILL ENHANCEMENT COURSE)	
At the end of this Course, student will have developed the ability to:	
CO - 1	Calculate measures of central tendencies and variations.
CO - 2	Interpret correlation and regression.
CO - 3	Solve problems in Probability theory.
CO - 4	Demonstrate and Infer based on various statistical tests using statistical software.

COURSE OUTCOME B.Sc. Mathematics MAT-200 Calculus of One Variable (MAJOR COURSE)	
At the end of this Course, student will have developed the ability to:	
CO - 1	Explain the algebra and properties of the set of real numbers.
CO - 2	Analyze various real sequences, their properties, and examine their convergence.
CO - 3	Prove and apply results in limits and continuity and disprove false statements.
CO - 4	Prove and apply results in differentiability and disprove false statements.

COURSE OUTCOME B.Sc. Mathematics MAT-201 Ordinary Differential Equations (MAJOR COURSE)	
At the end of this Course, student will have developed the ability to:	
CO - 1	Identify the type of a given differential equation.
CO - 2	Understand the concept and apply appropriate analytical techniques for finding the solution.
CO - 3	Prove various results concerning the methods and existence and uniqueness of solutions of differential equations.
CO - 4	Solve ordinary differential equations by using various numerical methods.

COURSE OUTCOME B.Sc. Mathematics MAT-211 Matrix Algebra (MINOR COURSE)	
At the end of this Course, student will have developed the ability to:	
CO - 1	Display familiarity and knowledge of System of Equations, Matrices and Matrix Operations.
CO - 2	Demonstrate proofs of Matrix Algebra.
CO - 3	Choose the appropriate procedures and modify them, if needed, to solve method-based problems on the concepts in the syllabus.
CO - 4	Analyze and solve unseen problems in Matrix Algebra and invent mathematically precise arguments to justify their solutions.

COURSE OUTCOME B.Sc. Mathematics MAT-212 Enumerative Combinatorics (MINOR COURSE)	
At the end of this Course, student will have developed the ability to:	
CO - 1	Understand various counting techniques demonstrated in the syllabus.
CO - 2	Develop a combinatorial reasoning and create combinatorial proofs of basic combinatorial identities.
CO - 3	Apply appropriate combinatorial techniques to break down various complex problems into more manageable parts and facilitate their solution.
CO - 4	Analyze and provide an efficient framework for solving various problems with discrete structures.

COURSE OUTCOME B.Sc. Mathematics MAT-213 Transformation Techniques (MINOR COURSE)	
At the end of this Course, student will have developed the ability to:	
CO - 1	Apply Laplace transforms to solve differential equations.
CO - 2	Apply Z – transforms to solve difference equations.
CO - 3	Construct the Fourier series of given functions.
CO - 4	Apply Fourier transforms to solve Boundary Value Problems.

COURSE OUTCOME B.Sc. Mathematics MAT-231 Basic Financial Mathematics (MULTIDISCIPLINARY COURSE)	
At the end of this Course, student will have developed the ability to:	
CO - 1	Introduction to the use of mathematical tools for financial calculations.
CO - 2	Develop abilities to create, derive, and apply financial mathematical tools.
CO - 3	Apply tax rules to file income tax returns.
CO - 4	Use appropriate principles to plan in stock market investment.

COURSE OUTCOME B.Sc. Mathematics MAT-241 Technical Typesetting Using LaTeX (SKILL ENHANCEMENT COURSE)	
At the end of this Course, student will have developed the ability to:	
CO - 1	To Create and typeset a LaTeX document.
CO - 2	To Build documents containing Mathematics.
CO - 3	To experiment with pictures and graphics in LaTeX.
CO - 4	To Prepare impressive beamer presentations and typeset question papers using the exam class.

COURSE OUTCOME B.Sc. Mathematics MAT-202 Analysis (MAJOR COURSE)	
At the end of this Course, student will have developed the ability to:	
CO - 1	Analyze various real sequences, their properties, and examine their convergence.
CO - 2	Apply various convergence tests to identify convergent series.
CO - 3	Decide on uniform and pointwise convergence of a sequence of functions.
CO - 4	Judge the uniform and pointwise convergence of a series of functions.

COURSE OUTCOME B.Sc. Mathematics MAT-203 Linear Algebra (MAJOR COURSE)	
At the end of this Course, student will have developed the ability to:	
CO - 1	Display familiarity and knowledge of the concepts in the syllabus.
CO - 2	Demonstrate proofs to establish truths related to the concepts in the syllabus.
CO - 3	Choose the appropriate procedures and modify them, if needed, to solve method-based problems on the concepts in the syllabus.
CO - 4	Analyze and solve unseen problems in Linear Algebra and invent mathematically precise arguments to justify their solutions.

COURSE OUTCOME B.Sc. Mathematics MAT-204 Basic Number Theory (MAJOR COURSE)	
At the end of this Course, student will have developed the ability to:	
CO - 1	Recollect the important definitions and theorems in the course.
CO - 2	Explain the various proofs and concepts in the course.
CO - 3	Solve various computational problems in the course.
CO - 4	Solve problems using the concepts learnt in the course.

COURSE OUTCOME B.Sc. Mathematics MAT-205 Analytical 2D Geometry (MAJOR COURSE)	
At the end of this Course, student will have developed the ability to:	
CO - 1	Define terms and explain concepts related to geometry.
CO - 2	Understand metric properties in a plane, and the different forms of lines and circles in a plane.
CO - 3	Classify various conics in a plane and establish results concerning them.
CO - 4	Develop analytical skills in solving geometric problems.

COURSE OUTCOME B.Sc. Mathematics MAT-221 Probability Theory (VOCATIONAL EDUCATION AND TRAINING)	
At the end of this Course, student will have developed the ability to:	
CO - 1	Apply the knowledge of probability theory in analyzing real life situations and case studies.
CO - 2	Model various probability functions.
CO - 3	Illustrate and interpret mathematical expectation.
CO - 4	Solve various problems in probability distributions.

COURSE OUTCOME B.Sc. Mathematics MAT-222 Theory of Equations (VOCATIONAL EDUCATION AND TRAINING)	
At the end of this Course, student will have developed the ability to:	
CO - 1	Recollect the important definitions and theorems in the Theory of Equations.
CO - 2	Explain the various proofs and concepts in the course.
CO - 3	Solve problems in using techniques in the course.
CO - 4	Solve unseen problems using the concepts learnt in the course.

COURSE OUTCOME B.Sc. Mathematics MAT-223 Graph Theory (VOCATIONAL EDUCATION AND TRAINING)	
At the end of this Course, student will have developed the ability to:	
CO - 1	Display familiarity and knowledge of the concepts in the syllabus.
CO - 2	Demonstrate proofs to establish truths related to the concepts in the syllabus.
CO - 3	Choose the appropriate procedures and modify them, if needed, to solve method-based problems on the concepts in the syllabus.
CO - 4	Analyze and solve unseen problems in Graph Theory and invent mathematically precise arguments to justify their solutions.