Department of Mathematics

Programme Name: BSc Mathematics (Honours & General)
Programme Outcomes :

• Student will be entirely equipped with the knowledge of all the branches of Mathematics.

• This programme will provide a very strong foundation in Mathematics.

• Students would have astrong understanding of using mathematicalequation in Algebra and Calculus.

• Students will be equipped with mathematics skills and techniques which can be applied in both academic and non-academic areas of work.

• Students will have placements scopes in academic areas include jobs as teaching faculties in schools.

<table>
<tr><td colspan="3" align="center">Course specific outcome</td></tr>
<tr><td>Course Code</td><td>Course Name</td><td>Course Outcome</td></tr>
<tr><td>MTM-A-CC-1-1- TH</td><td>CALCULUS, GEOMETRY AND VECTOR ANALYSIS</td><td>Students will learn the fundamentals of calculus, geometry and vector algebra</td></tr>
<tr><td>MTM-A- CC-1-2- TH</td><td>ALGEBRA</td><td>To provide students with the knowledge of Complex number, theory of equation, inequalities, number theory, rank of matrix and their application</td></tr>
<tr><td>MTMG- CC-1 /GE -1-TH</td><td>ALGEBRA, DIFFERENTIAL CALCULUS I, DIFFERENTIAL EQUATION I AND GEOMETRY</td><td>To provide students with the knowledge of Complex number, theory of equation, inequalities, number theory, rank of matrix and their application also Students will learn the fundamentals of calculus (limit,comtinuity& differentiablity) , geometry and differential equation (upto 2nd order linear equation with constant coefficient)</td></tr>
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MTM-A-CC-2-3-TH	REAL ANALYSIS	Students will learn about details of real numbers, sequences and sub-sequences along with idea of convergence of infinite series
MTM-A- CC-2-4- TH	GROUP THEORY-I	To provide a thorough understanding of normal sub-group and knowledge of homomorphism, isomorphism of groups, quotient group etc.
MTMG- CC-2 /GE -2-TH	DIFFERENTIAL CALCULUS II,DIFFERENTIAL EQUATION II ,VECTOR ALGEBRA AND DISCRETE MATHEMATICS	It introduces students to the fundamental concepts of Sequence ,series,application of calculus, homogeneous linear differential equation , partial differential equation,vector algebra, integers, congruence & its application and Boolean algebra.
MTM-A- CC-3-5- TH	THEORY OF REAL FUNCTION	To give students the ideas of Real Analysis.
MTM-A- CC-3-6- TH	RING THEORY & LINEAR ALGEBRA-I	It introduces students to the fundamental concepts of modern and linear algebra.
MTM-A- CC-3-7- TH	ORDINARY DIFFRENCIAL EQUATION & MULTIVARIATE CALCULUS-I	It introduces the fundamentals of the subject so that they can apply them to the mathematical methods of physics problems.
MTMA-SEC-A	C PROGRAMMING LANGUAGE	Able to implement algorithms and draw flowcharts to solve engineering and math problems. Demonstrate understanding of computer programming language concepts.
MTMG- CC-3 /GE -3-TH	INTEGRAL CALCULUS,NUMERICAL METHOD AND LINEAR PROGRAMMING	Students will learn the fundamentals of integral calculus, numerical methods .Linear programming provides a method to optimize operations within certain constraints. It is used to make

		process efficient and cost effective.
MTM-A- CC-4-8-TH	RIEMANN INTEGRATION & SERIES OF FUNCTIONS	To enable students with the depth knowledge of real analysis
MTM A- CC-4-9- TH	PARTIAL DIFFRENCIAL EQUATION AND MULTIVAREATE CALCULUS-II	To teach the method of solution of partial differential equation.
MTM-MA- CC-4-10- TH	MECHANICS	More and more physical phenomena are expressed in mathematics and its graphics.
MTMA-SEC-B	SCIENTIFIC COMPUTING WITH SAGE MATH AND R	The course covers the basic syntax and semantics of SageMath/R including basic data types, variables, control structures and functions or similar concepts, and visualization of results and processed data.
MTMG- CC-4 /GE -4-TH	ALGEBRA II ,COMPUTER SCIENCE & PROGRAMMING ,PROBABILITY & STATISTICS	It teaches students to understand deeply about group theory , linear algebra also able to implement algorithms & draw flowcharts to solve engineering & math problems.Demonstrate how to use probability in financial markets risk.
MTM-A- CC-5-11- TH	PROBABILTY AND STATISTICS	The application of probability theory in everyday life is reliability, and in business it is used to calculate long-term profits and losses. It teaches students to use probability in financial markets risk.
MTM-A- CC-5-12- TH	GROUP THEORY-II & LINEAR ALGEBRA-II	Groups can be found in geometry and represent phenomena such as symmetry and certain types of transformations.

MTMA-DSE-A1	BIO MATHEMATICS	From this topic students can know that mathematics has been used in areas such as cellular neurobiology, epidemic modeling and population genetics.
MTMA-DSE-B1	LINEAR PROGRAMMING AND GAME THEORY	Linear programming provides a method to optimize operations within certain constraints. It is used to make process efficient and cost effective. Some areas of application for linear programming include food and agriculture.
MTMG-SEC-A	C PROGRAMMING LANGUAGE	Able to implement algorithms and draw flowcharts to solve engineering and math problems. Demonstrate understanding of computer programming language concepts.
MTMG- DSE-A	PARTICLE DYNAMICS	To provide the knowledge of velocity, acceleration and also helps to build a concept about simple harmonic motion.
MTM-A- CC-6-13- TH	METRIC SPACE & COMPLEX ANALYSIS	In mathematics, a metric space is a set where a distance is defined between elements of a set. Metric space method have been employed for decades in various application , for example in internet search engines, image classifications etc.
MTM-A- CC-6-14- TH	NUMERICAL METHODS	Student can know that it is used for computer science for root finding Also they can know that it is used for multi dimensional root finding.
MTM-A- CC-6-14-P	Corresponding PRACTICALS	Student apply the said methods in c language of c++ in computer lab.
MTMA-DSE-A2	FLUIDSTATICS AND ELEMENTARY FLUID	Fluid mechanics has a wide range of applications in mechanical and

	DYNAMICS	chemical engineering, in biological systems, and in astrophysics.
MTMA-DSE-B2	ADVANCED MECHANICS	Understand the mathematical and physical foundations of solid continuum mechanics, including measurement of strains and stresses, elastic and plastic stress-strain relationships, and failure criteria; have the ability to pose and solve boundary value problems involving deformable solids; be able to analyze wave propagation and vibrations in elastic solids and understand the theoretical basis for finite element analysis of elastic solids.
MTMG- SEC-B	BOOLEAN ALGEBRA	Boolean algebra is used to analyze and simplify the digital circuits. It also helps to build concept about basic gates.
MTMG- DSE-B	ADVANCED CALCULUS	It helps to make concept about point-wise and uniform convergence. Students can learn about fourier series and laplace transform.