Name of Depa	ame of Department- Mathematics			
Course – B.A.	(Prog.) 2018-19			
Som	Type of Course	Course Name	Course Outcomes	
Sem	Type of Course		The students who take this course will be able to:	
			CO1: Understand continuity and differentiability in terms of limits	
1	Core	Calculus	CO2: Describe asymptotic behavior in terms of limits involving infinity	
			CO3: Use derivatives to explore the behavior of a given function, locating and	
			classifying its extrema, and graphing the function.	
			The course will enable the students to understand:	
2	Core	Algebra	CO1: Solving higher order algebraic equations	
_	cone	. ingeoire	CO2: Solving simultaneous linear equations with at most four unknowns.	
			CO3: Overview of abstract algebra, which is useful in their higher studies	
			The course will enable the students to:	
3	Core	Analytic Geometry and Applied Algebra	CO1: Identify and sketch curves.	
			CO2: Use three dimensional geometry using vectors.	
			CO3: Understand mathematical models to relate mathematics with daily life problems.	
			The course will enable the students to:	
4	Core	Analysis	CO1: Understand basic properties of the field of real numbers.	
			CO2: To test convergence of sequence and series of real numbers.	
			CO3: Distinguish between the notion of integral as anti-derivative and Riemann integral.	
			The course will enable the students to:	
5	Core/DSE	Statistics	CO1: Improve the quantitative and analytical skills.	
			CO2: Determine moments and distribution function using moment generating functions.	
			CO3: lest validity of hypothesis, using Chi-square, F and t-tests, respectively.	
			CO1: Wronskian and its properties	
6	Core/DSE	Differential Equations	CO2: Method of variation of parameters and total differential equations	
			CO3: Lagrange's method and Charpit's method for solving PDE's of first order	
			This course will enable the students to solve:	
5	SEC	Transportation and Network Flow Problems	CO1: Transportation, Assignment and Traveling salesperson problems.	
			CO2: Network models and various network flow problems	
			This course will enable the students to:	
	SEC	Statistical Software: R	CO1: Use R as a calculator:	
6			CO2: Read and import data in R.	
			CO3: Explore and describe data in R and plot various graphs in R.	
			The course will enable the students to understand:	
5	GE	General Elective-I	CO1: The contributions of remarkable Mathematicians in the field of mathematics.	
			CO2: The number systems and their properties, also Latin and Magic squares.	
			CO3:Matrices and determinants, inverse of a matrix, Cramer's rule to solve a systems of linear	
			equations.	
	GE	General Elective-II	CO1: The contributions of remarkable Mathematicians in the field of mathematics	
6			CO2: Perspective geometry and its uses in art. Fractals and Fibonacci sequences	
0			with their applications in nature.	
			CO3: Types of symmetry and patterns by looking at monuments/buildings/ornamental art, Escher's art, Golden Ratio.	

Name of Depa	e of Department- Mathematics				
Course – B.A.	(Prog.) 2019-20				
Sem	Type of Course	Course Name	Course Outcomes		
			The students who take this course will be able to:		
1	Corre	Coloria	CO1: Understand continuity and differentiability in terms of limits.		
1	Core	Calculus	CO2: Describe asymptotic behavior in terms of limits involving infinity.		
			CO3: Use derivatives to explore the behavior of a given function, locating and		
			The course will enable the students to understand:		
			CO1: Solving higher order algebraic equations		
2	Core	Algebra	CO2: Solving simultaneous linear equations with at most four unknowns		
			CO3: Overview of abstract algebra, which is useful in their higher studies		
			The course will enable the students to:		
	~		CO1: Identify and sketch curves		
3	Core	Analytic Geometry and Applied Algebra	CO2: Use three dimensional geometry using vectors.		
			CO3: Understand mathematical models to relate mathematics with daily life problems.		
			The course will enable the students to:		
4	Cara	Analyzia	CO1: Understand basic properties of the field of real numbers.		
4	Core	Analysis	CO2: To test convergence of sequence and series of real numbers.		
			CO3: Distinguish between the notion of integral as anti-derivative and Riemann integral.		
			The course will enable the students to:		
5	Core/DSE	Statistics	CO1: Improve the quantitative and analytical skills.		
5	Core/DSE	Statistics	CO2: Determine moments and distribution function using moment generating functions.		
			CO3: Test validity of hypothesis, using Chi-square, F and t-tests, respectively.		
			The course will enable the students to understand:		
6	Core/DSE	Differential Equations	CO1: Wronskian and its properties		
-			CO2: Method of variation of parameters and total differential equations		
			CO3: Lagrange's method, and Charpit's method for solving PDE's of first order.		
-	SEC	Transportation and Network Flow Problems	This course will enable the students to solve:		
5			CO1: Iransportation, Assignment and Iraveling salesperson problems.		
			CO2: Network models and various network flow problems.		
	SEC	Statistical Software: R	This course will enable the students to:		
6			CO1: Use R as a calculator;		
			CO2: Read and import data in R.		
			CO3: Explore and describe data in R and plot various graphs in R.		
5			The course will enable the students to understand:		
	GE	General Elective-I	CO1: The contributions of remarkable Mathematicians in the field of mathematics.		
			CO3: Matrices and determinants, inverse of a matrix. Cramer's rule to solve a systems of linear		
			equations.		
		GE General Elective-II	The course will enable the students to understand:		
	GE		CO1: The contributions of remarkable Mathematicians in the field of mathematics.		
6			CO2:Perspective geometry and its uses in art, Fractals and Fibonacci sequences with their applications in nature.		
			CO3: Types of symmetry and patterns by looking at monuments/buildings/ornamental art, Escher's art, Golden Ratio.		

Name of Department- Mathematics			
Course – B.A. (Prog.) 2020-21			
Sem	Type of Course	Course Name	Course Outcomes
			The students who take this course will be able to:
	9		CO1: Understand continuity and differentiability in terms of limits.
1	Core	Calculus	CO2: Describe asymptotic behavior in terms of limits involving infinity.
			CO3: Use derivatives to explore the behavior of a given function, locating and
			Classifying its extrema, and graphing the function.
			COL Solving higher and a clockroig equations
2	Core	Algebra	CO1. Solving higher order argeoraic equations
			CO2: Overview of electron clocking, which is useful in their history studies.
			The course will enable the students to:
			COLL Identify and elected surgers
3	Core	Analytic Geometry and Applied Algebra	CO2: Use three dimensional geometry using vectors
			CO2: Understand mathematical models to relate mathematics with daily life problems
			The course will enable the students to:
	Core		CO1: Understand basic properties of the field of real numbers
4		Analysis	CO2: To test convergence of sequence and series of real numbers.
			CO3: Distinguish between the notion of integral as anti-derivative and Riemann integral
	Core/DSE		The course will enable the students to:
		Statistics	CO1: Improve the quantitative and analytical skills.
5			CO2: Determine moments and distribution function using moment generating functions.
			CO3: Test validity of hypothesis, using Chi-square, F and t-tests, respectively.
			The course will enable the students to understand:
6	Core/DSE	Differential Equations	CO1: Wronskian and its properties
0			CO2: Method of variation of parameters and total differential equations
			CO3: Lagrange's method, and Charpit's method for solving PDE's of first order.
			This course will enable the students to solve:
5	SEC	Transportation and Network Flow Problems	CO1: Transportation, Assignment and Traveling salesperson problems.
			CO2: Network models and various network flow problems.
		Statistical Software: R	This course will enable the students to:
6	SEC		CO1: Use R as a calculator;
v	SEC		CO2: Read and import data in R.
			CO3: Explore and describe data in R and plot various graphs in R.

Name of Department- Mathematics			
Course – B.A. (Prog.) 2021-22			
Sem	Type of Course	Course Name	Course Outcomes
			The students who take this course will be able to:
	9		CO1: Understand continuity and differentiability in terms of limits.
1	Core	Calculus	CO2: Describe asymptotic behavior in terms of limits involving infinity.
			CO3: Use derivatives to explore the behavior of a given function, locating and
			Classifying its extrema, and graphing the function.
			COL Solving higher order algebraic equations
2	Core	Algebra	CO1: Solving nigher order algebraic equations
			CO2: Overview of electron clocking, which is useful in their history studies.
			The course will enable the students to:
			COLL Identify and elected surgers
3	Core	Analytic Geometry and Applied Algebra	CO2: Use three dimensional geometry using vectors
			CO2: Understand mathematical models to relate mathematics with daily life problems
			The course will enable the students to:
	Core		CO1: Understand basic properties of the field of real numbers
4		Analysis	CO2: To test convergence of sequence and series of real numbers.
			CO3: Distinguish between the notion of integral as anti-derivative and Riemann integral
	Core/DSE		The course will enable the students to:
		Statistics	CO1: Improve the quantitative and analytical skills.
5			CO2: Determine moments and distribution function using moment generating functions.
			CO3: Test validity of hypothesis, using Chi-square, F and t-tests, respectively.
			The course will enable the students to understand:
6	Core/DSE	Differential Equations	CO1: Wronskian and its properties
0			CO2: Method of variation of parameters and total differential equations
			CO3: Lagrange's method, and Charpit's method for solving PDE's of first order.
	SEC		This course will enable the students to solve:
5		Transportation and Network Flow Problems	CO1: Transportation, Assignment and Traveling salesperson problems.
			CO2: Network models and various network flow problems.
		Statistical Software: R	This course will enable the students to:
6	SEC		CO1: Use R as a calculator;
Ŭ	ble		CO2: Read and import data in R.
			CO3: Explore and describe data in R and plot various graphs in R.

Name of Department- Mathematics				
Course - B.A. (Prog.) 2022-23				
course bill	(110 g) 2022 20			
Sem	Type of Course	Course/Paper Name	Course/Paper Outcomes	
1	MAJOR	Elements of Discrete Mathematics	This course will enable the students to:	
			CO1: Understand the basic concepts of sets, relations, functions, and induction.	
			CO2: Understand mathematical logic and logical operations to various fields.	
			CO3: Minimize a Boolean polynomial and apply Boolean algebra techniques to decode switching	
			circuits.	
1	MINOR	Topics in Calculus	This course will enable the students to:	
			CO1: Understand continuity and differentiability in terms of limits and graphs of certain functions.	
			CO2: Describe asymptotic behaviour in terms of limits involving infinity.	
			CO3: Use of derivatives to explore the behaviour of a given function locating and classify its extrema and graphing the function	
			CO4: Apply the concepts of asymptotes, and inflexion points in tracing of cartesian curves.	
			CO5: Compute the reduction formulae of standard transcendental functions with applications.	
1	VAC	Vedic Mathematics-1	The learning outcomes of the course are:	
			CO1: Overcome of the fear of Mathematics.	
			CO2: Improved critical thinking.	
			CO3: Familiarity with the Mathematical; underpinnings and techniques.	
			CO4: Ability to do basic mathematics faster and with ease.	
1	arc.	Continuing with D	CO5: Appreciate the Mathematical Advancement with of Ancient India.	
1	SEC	Statistics with R	I ne learning outcomes of the course are:	
			meaningful statistical analysis performed on the data.	
			CO2: To enable students to extract data, and perform basic statistical operations in entelling.	
			CO3: Data analysis, such as - data cleaning, data visualisation, data summarisation, and regression	
2	MAJOR	Analytic Geometry	amongst others. This course will enable the students to:	
2	WINGOIC	Analytic Geometry	CO1: Learn concerts in two-dimensional geometry	
			CO2: Identify and sketch conics namely, ellipse, parabola and hyperbola.	
			CO3: Learn about three-dimensional objects such as straight lines and planes using	
	MINIOP	TE1 / T A1 1	vectors, spheres, cones and cylinders.	
2	MINOR	Elementary Linear Algebra	This course will enable the students to:	
			CO1: Visualize the space R^n in terms of vectors and the interrelation of vectors with matrices	
			CO2: Familiarize with concepts of bases, dimension and minimal spanning sets in vector spaces.	
			CO3: Learn about linear transformation and its corresponding matrix.	
2	SEC	Statistics with R	The learning outcomes of the course are:	
			CO1: To enable students to handle data in the R software, thereby helping them to understand	
			CO2: To enable students to extract data and perform basic statistical operations in entelling	
			CO3: Data analysis, such as – data cleaning, data visualisation, data summarisation, and regression	
			amongst others.	
2	VAC	Vedic Mathematics-1	The learning outcomes of the course are:	
			CO1: Overcome of the fear of Mathematics.	
			CO2: Eamiliarity with the Mothematical: underninnings and techniques	
			CO4: Ability to do basic mathematics faster and with ease	
			CO5: Appreciate the Mathematical Advancement with of Ancient India.	
3	Core	Analytic Geometry and Applied Algebra	The course will enable the students to:	
			CO1: Identify and sketch curves.	
			CO2: Use three dimensional geometry using vectors.	
			CO3: Understand mathematical models to relate mathematics with daily life problems.	
4	Core	Analysis	The course will enable the students to:	
			CO1: Understand basic properties of the field of real numbers.	
			CO2: To test convergence of sequence and series of real numbers.	
5	Com/DSE	Quality in a	CO3: Distinguish between the notion of integral as anti-derivative and Riemann integral.	
3	COIE/DSE	Statistics	CO1: Improve the quantitative and analytical skills	
			CO2: Determine moments and distribution function using moment generating functions	
			CO3: Test validity of hypothesis, using Chi-square, F and t-tests. respectively.	
6	Core/DSE	Differential Equations	The course will enable the students to understand:	
			CO1: Wronskian and its properties	
			CO2: Method of variation of parameters and total differential equations	
			CO3: Lagrange's method, and Charpit's method for solving PDE's of first order.	
5	SEC	Transportation and Network Flow Problems	This course will enable the students to solve:	
			CO1: Transportation, Assignment and Traveling salesperson problems.	
			CO2: Network models and various network flow problems.	

6	SEC	SEC Statistical Software: R	This course will enable the students to:
	CO1: Use R as a calculator;		
	CO2: Read and import data in R.		
			CO3: Explore and describe data in R and plot various graphs in R.

Name of Department- Mathematics				
Course – B.A. (Prog.) 2023-24				
Sem	Type of Course	Course/Paper Name	Course/Paper Outcomes	
1	MAJOR	Elements of Discrete Mathematics	This course will enable the students to:	
			CO1: Understand the basic concepts of sets, relations, functions, and induction.	
			CO2. Understand mathematical logic and logical operations to various fields.	
			CO3: Minimize a Boolean polynomial and apply Boolean algebra techniques to decode switching	
			circuits.	
1	MINOR	Topics in Calculus	This course will enable the students to:	
			CO1: Understand continuity and differentiability in terms of limits and graphs of certain functions.	
			CO2: Describe asymptotic behaviour in terms of limits involving infinity.	
			CO3: Use of derivatives to explore the behaviour of a given function locating and classify its extrema and graphing the function	
			CO4: Apply the concepts of asymptotes, and inflexion points in tracing of cartesian curves.	
			CO5: Compute the reduction formulae of standard transcendental functions with applications.	
1	VAC	Vedic Mathematics-1	The learning outcomes of the course are:	
			CO1: Overcome of the fear of Mathematics.	
			CO2: Improved critical thinking.	
			CO3: Familiarity with the Mathematical; underpinnings and techniques.	
			CO4: Ability to do basic mathematics faster and with ease.	
1	SEC.	Statistics with D	CO5: Appreciate the Mathematical Advancement with of Ancient India.	
1	SEC	Statistics with R	I he learning outcomes of the course are:	
			meaningful statistical analysis performed on the data.	
			CO2: To enable students to extract data, and perform basic statistical operations in entelling.	
			CO3: Data analysis, such as - data cleaning, data visualisation, data summarisation, and regression	
2	MAJOR	Analytic Geometry	amongst others. This course will enable the students to:	
2	MAJOR	Analytic Geometry	CO1: Learn concents in two-dimensional geometry	
			CO2: Identify and sketch conics namely, ellipse, parabola and hyperbola.	
			CO3: Learn about three-dimensional objects such as straight lines and planes using	
	MILOD		vectors, spheres, cones and cylinders.	
2	MINOR	Elementary Linear Algebra	This course will enable the students to:	
			CO1: Visualize the space R^n in terms of vectors and the interrelation of vectors with matrices	
			CO2: Familiarize with concepts of bases, dimension and minimal spanning sets in vector spaces.	
			CO3: Learn about linear transformation and its corresponding matrix.	
2	SEC	Statistics with R	The learning outcomes of the course are:	
			CO1: To enable students to handle data in the R software, thereby helping them to understand	
			CO2: To enable students to extract data, and perform basic statistical operations in entelling	
			CO3: Data analysis, such as – data cleaning, data visualisation, data summarisation, and regression	
			amongst others.	
2	VAC	Vedic Mathematics-1	The learning outcomes of the course are:	
			CO1: Overcome of the fear of Mathematics.	
			CO2: Eamiliarity with the Mathematical: underninnings and techniques	
			CO4: Ability to do basic mathematics faster and with ease	
			CO5: Appreciate the Mathematical Advancement with of Ancient India.	
3	Core	Analytic Geometry and Applied Algebra	The course will enable the students to:	
			CO1: Identify and sketch curves.	
			CO2: Use three dimensional geometry using vectors.	
			CO3: Understand mathematical models to relate mathematics with daily life problems.	
4	Core	Analysis	The course will enable the students to:	
			CO1: Understand basic properties of the field of real numbers.	
			CO2: To test convergence of sequence and series of real numbers.	
5	Cara/DSE	Statistics	CO3: Distinguish between the notion of integral as anti-derivative and Riemann integral.	
3	CORE/DSE	Statistics	CO1: Improve the quantitative and analytical skills	
			CO2: Determine moments and distribution function using moment generating functions	
			CO3: Test validity of hypothesis, using Chi-square. F and t-tests respectively	
6	Core/DSE	Differential Equations	The course will enable the students to understand:	
			CO1: Wronskian and its properties	
			CO2: Method of variation of parameters and total differential equations	
			CO3: Lagrange's method, and Charpit's method for solving PDE's of first order.	
5	SEC	Transportation and Network Flow Problems	This course will enable the students to solve:	
			CO1: Transportation, Assignment and Traveling salesperson problems.	
			CO2: Network models and various network flow problems.	

6	SEC	SEC Statistical Software: R	This course will enable the students to:
	CO1: Use R as a calculator;		
	CO2: Read and import data in R.		
			CO3: Explore and describe data in R and plot various graphs in R.