



TELANGANA TRIBAL WELFARE RESIDENTIAL DEGREE COLLEGE (MEN) NAGARKURNOOL

(AFFILIATED TO PALAMURU UNIVERSITY. CODE: 3391)

Nagarkurnool, @ Macharam (Jadcherla), Mahabubnagar (Dist.) – 509301

✉ : ttwrdcboys.nagarkurnool@gmail.com; ☎ : 8074582331, 7901097703.



PROGRAM OUTCOMES FOR ACADEMIC YEAR 2017-18


DEPARTMENT OF MATHEMATICS SEMESTER-I


NAME OF THE PAPER	MATHEMATICS-I
PAPER CODE	DSC – 1A
PAPER NAME	Differential & Integral Calculus
Learning Objective	The course is aimed at exposing the students to some basic notions in differential calculus
Learning Outcomes	Explain the relationship between the derivative of a function as a function and the notion of the derivative as the slope of the tangent line to a function at a point. 1) Compare and contrast the ideas of continuity and differentiability. 2) To inculcate to solve algebraic equations and inequalities involving the sequence root and modulus function 3) To able to calculate limits in indeterminate forms by a repeated use of L' Hospital rule. 4) To know the chain rule and use it to find derivatives of composite functions. 5) To find maxima and minima, critical points and inflection points of functions and to determine the concavity of curves. 6) To able to evaluate integrals of rational functions by partial fractions.

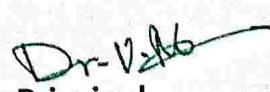
PROGRAM OUTCOMES FOR ACADEMIC YEAR 2017-18

DEPARTMENT OF MATHEMATICS SEMESTER-II

NAME OF THE PAPER	MATHEMATICS-II
PAPER CODE	DSC – 1B
PAPER NAME	Differential Equations
Learning Objective	<ol style="list-style-type: none"> 1. Evaluate first order differential equations including separable, homogeneous, exact, and linear. 2. Show existence and uniqueness of solutions. 3. Solve second order and higher order linear differential equations. 4. Create and analyse mathematical models using higher order differential equations to solve application problems such as harmonic oscillator and circuits. 5. Solve differential equations using variation of parameters 6. Solve linear systems of ordinary differential equations
Learning Outcomes	<p>After the completion of the course, Students will be able to</p> <ol style="list-style-type: none"> 1. Student will be able to solve first order differential equations utilizing the standard techniques for separable, exact, linear, homogeneous, or Bernoulli cases. 2. Student will be able to find the complete solution of a nonhomogeneous differential equation as a linear combination of the complementary function and a particular solution. 3. Student will be introduced to the complete solution of a nonhomogeneous differential equation with constant coefficients by the method of undetermined coefficients. 4. Student will be able to find the complete solution of a differential equation with constant coefficients by variation of parameters. 5. Student will have a working knowledge of basic application problems described by second order linear differential equations with constant coefficients.


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 College Code: 3391 (P.O.)
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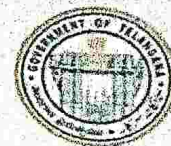


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PROGRAM OUTCOMES FOR ACADEMIC YEAR 2018-19

DEPARTMENT OF MATHEMATICS SEMESTER-I

NAME OF THE PAPER	MATHEMATICS-I
PAPER CODE	DSC – 1A
PAPER NAME	Differential & Integral Calculus
Learning Objective	The course is aimed at exposing the students to some basic notions in differential calculus
Learning Outcomes	Explain the relationship between the derivative of a function as a function and the notion of the derivative as the slope of the tangent line to a function at a point. 1) Compare and contrast the ideas of continuity and differentiability. 2) To inculcate to solve algebraic equations and inequalities involving the sequence root and modulus function 3) To able to calculate limits in indeterminate forms by a repeated use of L' Hospital rule. 4) To know the claim rule and use it to find derivatives of composite functions. 5) To find maxima and minima, critical points and inflection points of functions and to determine the concavity of curves. 6) To able to evaluate integrals of rational functions by partial fractions.

PROGRAM OUTCOMES FOR ACADEMIC YEAR 2018-19

DEPARTMENT OF MATHEMATICS

SEMESTER-III

NAME OF THE PAPER	B.Sc (MATHEMATICS)
PAPER CODE	DSC – 1C
PAPER NAME	REAL ANALYSIS-III
Learning Objective	<p>he student will:</p> <ol style="list-style-type: none">1. Define the real numbers, least upper bounds, and the triangle inequality.2. Define functions between sets; equivalent sets; finite, countable and uncountable sets. Recognize convergent, divergent, bounded, Cauchy and monotone sequences.3. Calculate the limit superior, limit inferior, and the limit of a sequence.4. Recognize alternating, convergent, conditionally and absolutely convergent series.5. Determine if subsets of a metric space are open, closed, connected, bounded, totally bounded and/or compact.6. Determine if a function on a metric space is discontinuous, continuous, or uniformly continuous
LEARNING OUTCOMES	<p>After the completion of the course, Students will be able to</p> <ol style="list-style-type: none">1. describe fundamental properties of the real numbers that lead to the formal development of real analysis.2. comprehend rigorous arguments developing the theory underpinning real analysis.3. demonstrate an understanding of limits and how they are used in sequences, series, differentiation and integration.4. construct rigorous mathematical proofs of basic results in real analysis.5. appreciate how abstract ideas and rigorous methods in mathematical analysis can be applied to important practical problems.

PROGRAM OUTCOMES FOR ACADEMIC YEAR 2018-19

DEPARTMENT OF MATHEMATICS


SEMESTER-II


NAME OF THE PAPER	MATHEMATICS-II
PAPER CODE	DSC – 1B
PAPER NAME	Differential Equations
Learning Objective	<ol style="list-style-type: none">1. Evaluate first order differential equations including separable, homogeneous, exact, and linear.2. Show existence and uniqueness of solutions.3. Solve second order and higher order linear differential equations.4. Create and analyse mathematical models using higher order differential equations to solve application problems such as harmonic oscillator and circuits.5. Solve differential equations using variation of parameters6. Solve linear systems of ordinary differential equations
Learning Outcomes	<p>After the completion of the course, Students will be able to</p> <ol style="list-style-type: none">1. Student will be able to solve first order differential equations utilizing the standard techniques for separable, exact, linear, homogeneous, or Bernoulli cases.2. Student will be able to find the complete solution of a nonhomogeneous differential equation as a linear combination of the complementary function and a particular solution.3. Student will be introduced to the complete solution of a nonhomogeneous differential equation with constant coefficients by the method of undetermined coefficients.4. Student will be able to find the complete solution of a differential equation with constant coefficients by variation of parameters.5. Student will have a working knowledge of basic application problems described by second order linear differential equations with constant coefficients.

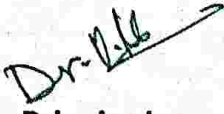
PROGRAM OUTCOMES FOR ACADEMIC YEAR 2018-19

DEPARTMENT OF MATHEMATICS SEMESTER-IV

PAPER CODE	DSC – 1D
PAPER NAME	Algebra
Learning Objective	<ol style="list-style-type: none"> 1. Present the relationships between abstract algebraic structures with familiar numbers systems such as the integers and real numbers. 2. Present concepts of and the relationships between operations satisfying various properties (e.g. commutative property). 3. Present concepts and properties of various algebraic structures. 4. Discuss the importance of algebraic properties relative to working within various number systems. 5. Develop the ability to form and evaluate conjectures
Learning Outcomes	<p>After the completion of the course, Students will be able to</p> <ol style="list-style-type: none"> 1. Understand the importance of algebraic properties with regard to working within various number systems. 2. Extend group structure to finite permutation groups (Cayley's Theorem). 3. Generate groups given specific conditions. 4. Investigate symmetry using group theory. 5. Understand the three major concrete models of Boolean algebra: the algebra of sets, the algebra of electrical circuits, and the algebra of logic.


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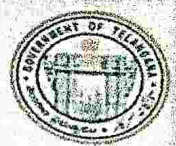

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PROGRAM OUTCOMES FOR ACADEMIC YEAR 2019-20

DEPARTMENT OF MATHEMATICS SEMESTER-I

NAME OF THE PAPER	MATHEMATICS-I
PAPER CODE	DSC – 1A
PAPER NAME	Differential & Integral Calculus
Learning Objective	The course is aimed at exposing the students to some basic notions in differential calculus
Learning Outcomes	<p>Explain the relationship between the derivative of a function as a function and the notion of the derivative as the slope of the tangent line to a function at a point.</p> <ol style="list-style-type: none"> 1) Compare and contrast the ideas of continuity and differentiability. 2) To inculcate to solve algebraic equations and inequalities involving the sequence root and modulus function 3) To able to calculate limits in indeterminate forms by a repeated use of L' Hospital rule. 4) To know the claim rule and use it to find derivatives of composite functions. 5) To find maxima and minima, critical points and inflection points of functions and to determine the concavity of curves. 6) To able to evaluate integrals of rational functions by partial fractions.

PROGRAM OUTCOMES FOR ACADEMIC YEAR 2019-20

DEPARTMENT OF MATHEMATICS SEMESTER-II

NAME OF THE PAPER	MATHEMATICS-II
PAPER CODE	DSC – 1B
PAPER NAME	Differential Equations
Learning Objective	<ol style="list-style-type: none"> 1. Evaluate first order differential equations including separable, homogeneous, exact, and linear. 2. Show existence and uniqueness of solutions. 3. Solve second order and higher order linear differential equations. 4. Create and analyse mathematical models using higher order differential equations to solve application problems such as harmonic oscillator and circuits. 5. Solve differential equations using variation of parameters 6. Solve linear systems of ordinary differential equations
Learning Outcomes	<p>After the completion of the course, Students will be able to</p> <ol style="list-style-type: none"> 1. Student will be able to solve first order differential equations utilizing the standard techniques for separable, exact, linear, homogeneous, or Bernoulli cases. 2. Student will be able to find the complete solution of a nonhomogeneous differential equation as a linear combination of the complementary function and a particular solution. 3. Student will be introduced to the complete solution of a nonhomogeneous differential equation with constant coefficients by the method of undetermined coefficients. 4. Student will be able to find the complete solution of a differential equation with constant coefficients by variation of parameters. 5. Student will have a working knowledge of basic application problems described by second order linear differential equations with constant coefficients.

PROGRAM OUTCOMES FOR ACADEMIC YEAR 2019-20

DEPARTMENT OF MATHEMATICS SEMESTER-III

NAME OF THE PAPER	B.Sc (MATHEMATICS)
PAPER CODE	DSC – 1C
PAPER NAME	REAL ANALYSIS-III
Learning Objective	<p>The student will:</p> <ol style="list-style-type: none"> 1. Define the real numbers, least upper bounds, and the triangle inequality. 2. Define functions between sets; equivalent sets; finite, countable and uncountable sets. Recognize convergent, divergent, bounded, Cauchy and monotone sequences. 3. Calculate the limit superior, limit inferior, and the limit of a sequence. 4. Recognize alternating, convergent, conditionally and absolutely convergent series. 5. Determine if subsets of a metric space are open, closed, connected, bounded, totally bounded and/or compact. 6. Determine if a function on a metric space is discontinuous, continuous, or uniformly continuous.
LEARNING OUTCOMES	<p>After the completion of the course, Students will be able to</p> <ol style="list-style-type: none"> 1. Describe fundamental properties of the real numbers that lead to the formal development of real analysis. 2. Comprehend rigorous arguments developing the theory underpinning real analysis. 3. Demonstrate an understanding of limits and how they are used in sequences, series, differentiation and integration. 4. Construct rigorous mathematical proofs of basic results in real analysis. 5. Appreciate how abstract ideas and rigorous methods in mathematical analysis can be applied to important practical problems.

PROGRAM OUTCOMES FOR ACADEMIC YEAR 2019-20
DEPARTMENT OF MATHEMATICS
SEMESTER-IV

PAPER CODE	DSC – 1D
PAPER NAME	Algebra
Learning Objective	<ol style="list-style-type: none"> 1. Present the relationships between abstract algebraic structures with familiar numbers systems such as the integers and real numbers. 2. Present concepts of and the relationships between operations satisfying various properties (e.g. commutative property). 3. Present concepts and properties of various algebraic structures. 4. Discuss the importance of algebraic properties relative to working within various number systems. 5. Develop the ability to form and evaluate conjectures
Learning Outcomes	<p>After the completion of the course, Students will be able to</p> <ol style="list-style-type: none"> 1. Understand the importance of algebraic properties with regard to working within various number systems. 2. Extend group structure to finite permutation groups (Cayley's Theorem). 3. Generate groups given specific conditions. 4. Investigate symmetry using group theory. 5. Understand the three major concrete models of Boolean algebra: the algebra of sets, the algebra of electrical circuits, and the algebra of logic.

PROGRAM OUTCOMES FOR ACADEMIC YEAR 2019-20

DEPARTMENT OF MATHEMATICS

SEMESTER-V

Paper –V

NAME OF THE PAPER	B.Sc (MATHEMATICS)
PAPER CODE	DSC – E
PAPER NAME	Linear Algebra
Learning Objective	<ol style="list-style-type: none"> 1. Solve systems of linear equations, 2. Analyze vectors in R^n geometrically and algebraically, 3. Recognize the concepts of the terms span, linear independence, basis, and dimension, and apply these concepts to various vector spaces and subspaces, 4. Use matrix algebra and the related matrices to linear transformations, 5. Compute and use determinants, 6. Compute and use eigenvectors and eigenvalues 7. Determine and use orthogonality, and 8. Use technological tools such as computer algebra systems or graphing calculators for visualization and calculation of linear algebra concepts.
LEARNING OUTCOMES	<p>After the completion of the course, Students will be able to</p> <ol style="list-style-type: none"> 1. Identify and construct linear transformations of a matrix. 2. Characterize linear transformations as onto, one-to-one. 3. Solve linear systems represented as linear transforms. 4. Express linear transforms in other forms, such as as matrix equations, and vector equations. 5. Characterize a set of vectors and linear systems using the concept of linear independence

PROGRAM OUTCOMES FOR ACADEMIC YEAR 2019-20

DEPARTMENT OF MATHEMATICS

SEMESTER-V

Paper -VI

NAME OF THE PAPER	B.Sc (MATHEMATICS)
PAPER CODE	DSE - 1F/C
PAPER NAME	Solid geometry
Learning Objective	<p>To get basic knowledge about Circle, Cone, Parabola, Hyperbola, Ellipse etc. 2. To understand the concepts & advance topics related to two & three dimensional geometry.</p> <p>3. To study the applications of conics.</p> <p>4. To study the application of Sphere, cone and cylinder.</p> <p>5. To study how to trace the curve.</p>
LEARNING OUTCOMES	<p>After the completion of the course, Students will be able to</p> <ol style="list-style-type: none">1. Understand geometrical terminology for angles, triangles, quadrilaterals and circles.2. Measure angles using a protractor.3. Use geometrical results to determine unknown angles.4. Recognise line and rotational symmetries.5. Find the areas of triangles, quadrilaterals and circles and shapes based on these.

PROGRAM OUTCOMES FOR ACADEMIC YEAR 2019-20

DEPARTMENT OF MATHEMATICS SEMESTER-VI


Paper –VII

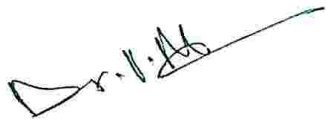
NAME OF THE PAPER	B.Sc (MATHEMATICS)
PAPER CODE	DSE VI(A)
PAPER NAME	Numerical Analysis
Learning Objective	<p>1. The course will also develop an understanding of the elements of error analysis for numerical methods and certain proofs. 2. The main objective of this course is to provide students with an introduction to the field of numerical analysis. 3. Derive appropriate numerical methods to solve interpolation based problems. 4. Derive appropriate numerical methods to solve probability based problems. 5. Prove results for various numerical root finding methods.</p>
LEARNING OUTCOMES	<p>After the completion of the course, Students will be able to</p> <ol style="list-style-type: none">1. Understand the theoretical and practical aspects of the use of numerical analysis.2. Proficient in implementing numerical methods for a variety of multidisciplinary applications.3. Establish the limitations, advantages, and disadvantages of numerical analysis.4. Derive numerical methods for various mathematical operations and tasks, such as interpolation, differentiation, integration, the solution of linear and nonlinear equations, and the solution of differential equations.5. Understand of common numerical analysis and how they are used to obtain approximate solutions to otherwise intractable mathematical problems.


PROGRAM OUTCOMES FOR ACADEMIC YEAR 2019-20

DEPARTMENT OF MATHEMATICS SEMESTER-VI Paper -VIII

NAME OF THE PAPER	B.Sc (MATHEMATICS)
PAPER CODE	DSE-1F/B
PAPER NAME	Vector Calculus
Learning Objective	Concepts like gradient, divergence, curl and their physical relevance will be taught.
LEARNING OUTCOMES	Students realize the way vector calculus is used to addresses some of the problems of physics.


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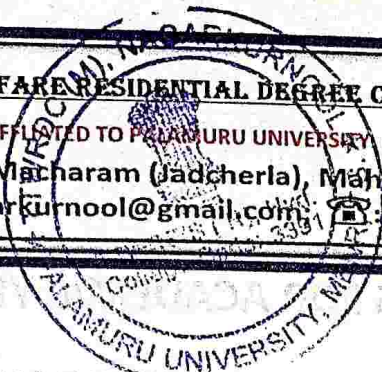
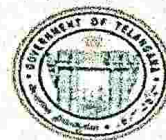


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PROGRAM OUTCOMES FOR ACADEMIC YEAR 2020-21

DEPARTMENT OF MATHEMATICS SEMESTER-I

NAME OF THE PAPER	MATHEMATICS-I
PAPER CODE	DSC – 1A
PAPER NAME	Differential & Integral Calculus
Learning Objective	The course is aimed at exposing the students to some basic notions in differential calculus
Learning Outcomes	Explain the relationship between the derivative of a function as a function and the notion of the derivative as the slope of the tangent line to a function at a point. 1) Compare and contrast the ideas of continuity and differentiability. 2) To inculcate to solve algebraic equations and inequalities involving the sequence root and modulus function 3) To able to calculate limits in indeterminate forms by a repeated use of L' Hospital rule. 4) To know the claim rule and use it to find derivatives of composite functions. 5) To find maxima and minima, critical points and inflection points of functions and to determine the concavity of curves. 6) To able to evaluate integrals of rational functions by partial fractions.

PROGRAM OUTCOMES FOR ACADEMIC YEAR 2020-21

DEPARTMENT OF MATHEMATICS SEMESTER-II

NAME OF THE PAPER	MATHEMATICS-II
PAPER CODE	DSC – 1B
PAPER NAME	Differential Equations
Learning Objective	<ol style="list-style-type: none"> 1. Evaluate first order differential equations including separable, homogeneous, exact, and linear. 2. Show existence and uniqueness of solutions. 3. Solve second order and higher order linear differential equations. 4. Create and analyse mathematical models using higher order differential equations to solve application problems such as harmonic oscillator and circuits. 5. Solve differential equations using variation of parameters 6. Solve linear systems of ordinary differential equations
Learning Outcomes	<p>After the completion of the course, Students will be able to</p> <ol style="list-style-type: none"> 1. Student will be able to solve first order differential equations utilizing the standard techniques for separable, exact, linear, homogeneous, or Bernoulli cases. 2. Student will be able to find the complete solution of a nonhomogeneous differential equation as a linear combination of the complementary function and a particular solution. 3. Student will be introduced to the complete solution of a nonhomogeneous differential equation with constant coefficients by the method of undetermined coefficients. 4. Student will be able to find the complete solution of a differential equation with constant coefficients by variation of parameters. 5. Student will have a working knowledge of basic application problems described by second order linear differential equations with constant coefficients.

PROGRAM OUTCOMES FOR ACADEMIC YEAR 2020-21

DEPARTMENT OF MATHEMATICS SEMESTER-II

NAME OF THE PAPER	MATHEMATICS-II
PAPER CODE	DSC – 1B
PAPER NAME	Differential Equations
Learning Objective	<ol style="list-style-type: none"> 1. Evaluate first order differential equations including separable, homogeneous, exact, and linear. 2. Show existence and uniqueness of solutions. 3. Solve second order and higher order linear differential equations. 4. Create and analyse mathematical models using higher order differential equations to solve application problems such as harmonic oscillator and circuits. 5. Solve differential equations using variation of parameters 6. Solve linear systems of ordinary differential equations
Learning Outcomes	<p>After the completion of the course, Students will be able to</p> <ol style="list-style-type: none"> 1. Student will be able to solve first order differential equations utilizing the standard techniques for separable, exact, linear, homogeneous, or Bernoulli cases. 2. Student will be able to find the complete solution of a nonhomogeneous differential equation as a linear combination of the complementary function and a particular solution. 3. Student will be introduced to the complete solution of a nonhomogeneous differential equation with constant coefficients by the method of undetermined coefficients. 4. Student will be able to find the complete solution of a differential equation with constant coefficients by variation of parameters. 5. Student will have a working knowledge of basic application problems described by second order linear differential equations with constant coefficients.

PROGRAM OUTCOMES FOR ACADEMIC YEAR 2020-21

DEPARTMENT OF MATHEMATICS SEMESTER-III

NAME OF THE PAPER	B.Sc (MATHEMATICS)
PAPER CODE	DSC – 1C
PAPER NAME	REAL ANALYSIS-III
Learning Objective	<p>The student will:</p> <ol style="list-style-type: none"> 1. Define the real numbers, least upper bounds, and the triangle inequality. 2. Define functions between sets; equivalent sets; finite, countable and uncountable sets. Recognize convergent, divergent, bounded, Cauchy and monotone sequences. 3. Calculate the limit superior, limit inferior, and the limit of a sequence. 4. Recognize alternating, convergent, conditionally and absolutely convergent series. 5. Determine if subsets of a metric space are open, closed, connected, bounded, totally bounded and/or compact. 6. Determine if a function on a metric space is discontinuous, continuous, or uniformly continuous.
LEARNING OUTCOMES	<p>After the completion of the course, Students will be able to</p> <ol style="list-style-type: none"> 1. Describe fundamental properties of the real numbers that lead to the formal development of real analysis. 2. Comprehend rigorous arguments developing the theory underpinning real analysis. 3. Demonstrate an understanding of limits and how they are used in sequences, series, differentiation and integration. 4. Construct rigorous mathematical proofs of basic results in real analysis. 5. Appreciate how abstract ideas and rigorous methods in mathematical analysis can be applied to important practical problems.

PROGRAM OUTCOMES FOR ACADEMIC YEAR 2020-21

DEPARTMENT OF MATHEMATICS SEMESTER-IV

PAPER CODE	DSC – 1D
PAPER NAME	Algebra
Learning Objective	<ol style="list-style-type: none">1. Present the relationships between abstract algebraic structures with familiar numbers systems such as the integers and real numbers.2. Present concepts of and the relationships between operations satisfying various properties (e.g. commutative property).3. Present concepts and properties of various algebraic structures.4. Discuss the importance of algebraic properties relative to working within various number systems.5. Develop the ability to form and evaluate conjectures
Learning Outcomes	<p>After the completion of the course, Students will be able to</p> <ol style="list-style-type: none">1. Understand the importance of algebraic properties with regard to working within various number systems.2. Extend group structure to finite permutation groups (Cayley's Theorem).3. Generate groups given specific conditions.4. Investigate symmetry using group theory.5. Understand the three major concrete models of Boolean algebra: the algebra of sets, the algebra of electrical circuits, and the algebra of logic.

PROGRAM OUTCOMES FOR ACADEMIC YEAR 2020-21

DEPARTMENT OF MATHEMATICS SEMESTER-IV SEC-III

NAME OF THE PAPER	B.Sc (MATHEMATICS)
PAPER CODE	SEC – III
PAPER NAME	Theory of Equations
Learning Objective	Students will be exposed to some of the jewels like Fermat's theorem, Euler's theorem in the number theory.
LEARNING OUTCOMES	Student uses the knowledge acquired solving some divisor problems.

PROGRAM OUTCOMES FOR ACADEMIC YEAR 2020-21

DEPARTMENT OF MATHEMATICS SEMESTER-III

SEC-I

NAME OF THE PAPER	B.Sc (MATHEMATICS)
PAPER CODE	SEC – I
PAPER NAME	Theory of Equations
Learning Objective	Students learn the relation between roots and coefficients of a polynomial equation, Descartes's rule of signs in finding the number of positive and negative roots if any of a polynomial equation besides some other concepts.
LEARNING OUTCOMES	By using the concepts learnt the students are expected to solve some of the polynomial equations.

PROGRAM OUTCOMES FOR ACADEMIC YEAR 2020-21

DEPARTMENT OF MATHEMATICS

SEMESTER-V

Paper -V

NAME OF THE PAPER	B.Sc. (MATHEMATICS)
PAPER CODE	DSC - E
PAPER NAME	Linear Algebra
Learning Objective	<ol style="list-style-type: none">1. Solve systems of linear equations,2. Analyse vectors in geometrically and algebraically,3. Recognize the concepts of the terms span, linear independence, basis, and dimension, and apply these concepts to various vector spaces and subspaces,4. Use matrix algebra and the related matrices to linear transformations,5. Compute and use determinants,6. Compute and use eigenvectors and eigenvalues7. Determine and use orthogonally, and 8. Use technological tools such as computer algebra systems or graphing calculators for visualization and calculation of linear algebra concepts.
LEARNING OUTCOMES	<p>After the completion of the course, Students will be able to</p> <ol style="list-style-type: none">1. Identify and construct linear transformations of a matrix.2. Characterize linear transformations as onto, one-to-one.3. Solve linear systems represented as linear transforms.4. Express linear transforms in other forms, such as matrix equations, and vector equations.5. Characterize a set of vectors and linear systems using the concept of linear independence

PROGRAM OUTCOMES FOR ACADEMIC YEAR 2020-21

DEPARTMENT OF MATHEMATICS SEMESTER-V Paper –VI

NAME OF THE PAPER	B.Sc. (MATHEMATICS)
PAPER CODE	DSE – 1F/C
PAPER NAME	Solid geometry
Learning Objective	To get basic knowledge about Circle, Cone, Parabola, Hyperbola, Ellipse etc. 2. To understand the concepts & advance topics related to two & three dimensional geometry. 3. To study the applications of conics. 4. To study the application of Sphere, cone and cylinder. 5. To study how to trace the curve.
LEARNING OUTCOMES	After the completion of the course, Students will be able to 1. Understand geometrical terminology for angles, triangles, quadrilaterals and circles. 2. Measure angles using a protractor. 3. Use geometrical results to determine unknown angles. 4. Recognise line and rotational symmetries. 5. Find the areas of triangles, quadrilaterals and circles and shapes based on these.

PROGRAM OUTCOMES FOR ACADEMIC YEAR 2020-21

DEPARTMENT OF MATHEMATICS SEMESTER-VI Paper -VII

NAME OF THE PAPER	B.Sc. (MATHEMATICS)
PAPER CODE	DSE VI(A)
PAPER NAME	Numerical Analysis
Learning Objective	<ol style="list-style-type: none">1. The course will also develop an understanding of the elements of error analysis for numerical methods and certain proofs.2. The main objective of this course is to provide students with an introduction to the field of numerical analysis.3. Derive appropriate numerical methods to solve interpolation based problems.4. Derive appropriate numerical methods to solve probability based problems.5. Prove results for various numerical root finding methods.
LEARNING OUTCOMES	<p>After the completion of the course, Students will be able to</p> <ol style="list-style-type: none">1. Understand the theoretical and practical aspects of the use of numerical analysis.2. Proficient in implementing numerical methods for a variety of multidisciplinary applications.3. Establish the limitations, advantages, and disadvantages of numerical analysis.4. Derive numerical methods for various mathematical operations and tasks, such as interpolation, differentiation, integration, the solution of linear and nonlinear equations, and the solution of differential equations.5. Understand of common numerical analysis and how they are used to obtain approximate solutions to otherwise intractable mathematical problems.

PROGRAM OUTCOMES FOR ACADEMIC YEAR 2020-21

DEPARTMENT OF MATHEMATICS


SEMESTER-VI

Paper –VIII

NAME OF THE PAPER	B.Sc. (MATHEMATICS)
PAPER CODE	DSE-1F/B
PAPER NAME	Vector Calculus
Learning Objective	Concepts like gradient, divergence, curl and their physical relevance will be taught.
LEARNING OUTCOMES	Students realize the way vector calculus is used to addresses some of the problems of physics.



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College Code: 3391 (P.U.)
Nagarkurnool-509209 (TS)



Principal
Principal
TTWR Degree College (B,
Nagar Kurnool - 509 209.

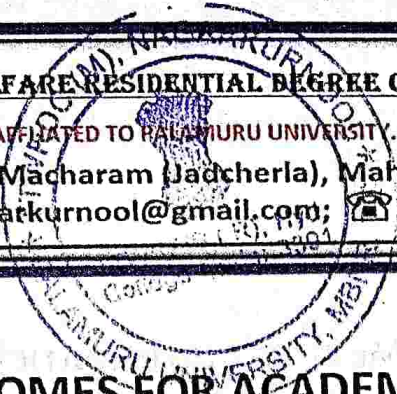


TELANGANA TRIBAL WELFARE RESIDENTIAL DEGREE COLLEGE (MEN) NAGARKURNOOL

(AFFILIATED TO PALAMURU UNIVERSITY, CODE: 3391)

Nagarkurnool, @ Macharam (Jadcherla), Mahabubnagar (Dist.) – 509301

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PROGRAM OUTCOMES FOR ACADEMIC YEAR 2021-22

DEPARTMENT OF MATHEMATICS SEMESTER-I

NAME OF THE PAPER	MATHEMATICS-I
PAPER CODE	DSC – 1A
PAPER NAME	Differential & Integral Calculus
Learning Objective	The course is aimed at exposing the students to some basic notions in differential calculus
Learning Outcomes	<p>Explain the relationship between the derivative of a function as a function and the notion of the derivative as the slope of the tangent line to a function at a point.</p> <ol style="list-style-type: none"> 1) Compare and contrast the ideas of continuity and differentiability. 2) To inculcate to solve algebraic equations and inequalities involving the sequence root and modulus function 3) To able to calculate limits in indeterminate forms by a repeated use of L' Hospital rule. 4) To know the claim rule and use it to find derivatives of composite functions. 5) To find maxima and minima, critical points and inflection points of functions and to determine the concavity of curves. 6) To able to evaluate integrals of rational functions by partial fractions.

PROGRAM OUTCOMES FOR ACADEMIC YEAR 2021-22

DEPARTMENT OF MATHEMATICS SEMESTER-II

NAME OF THE PAPER	MATHEMATICS-II
PAPER CODE	DSC – 1B
PAPER NAME	Differential Equations
Learning Objective	<ol style="list-style-type: none">1. Evaluate first order differential equations including separable, homogeneous, exact, and linear.2. Show existence and uniqueness of solutions.3. Solve second order and higher order linear differential equations.4. Create and analyse mathematical models using higher order differential equations to solve application problems such as harmonic oscillator and circuits.5. Solve differential equations using variation of parameters6. Solve linear systems of ordinary differential equations
Learning Outcomes	<p>After the completion of the course, Students will be able to</p> <ol style="list-style-type: none">1. Student will be able to solve first order differential equations utilizing the standard techniques for separable, exact, linear, homogeneous, or Bernoulli cases.2. Student will be able to find the complete solution of a nonhomogeneous differential equation as a linear combination of the complementary function and a particular solution.3. Student will be introduced to the complete solution of a nonhomogeneous differential equation with constant coefficients by the method of undetermined coefficients.4. Student will be able to find the complete solution of a differential equation with constant coefficients by variation of parameters.5. Student will have a working knowledge of basic application problems described by second order linear differential equations with constant coefficients.

PROGRAM OUTCOMES FOR ACADEMIC YEAR 2021-22

DEPARTMENT OF MATHEMATICS

SEMESTER-III

NAME OF THE PAPER	B.Sc (MATHEMATICS)
PAPER CODE	DSC – 1C
PAPER NAME	REAL ANALYSIS-III
Learning Objective	<p>The student will:</p> <ol style="list-style-type: none">1. Define the real numbers, least upper bounds, and the triangle inequality.2. Define functions between sets; equivalent sets; finite, countable and uncountable sets. Recognize convergent, divergent, bounded, Cauchy and monotone sequences.3. Calculate the limit superior, limit inferior, and the limit of a sequence.4. Recognize alternating, convergent, conditionally and absolutely convergent series.5. Determine if subsets of a metric space are open, closed, connected, bounded, totally bounded and/or compact.6. Determine if a function on a metric space is discontinuous, continuous, or uniformly continuous.
Learning Outcomes	<p>After the completion of the course, Students will be able to</p> <ol style="list-style-type: none">1. Describe fundamental properties of the real numbers that lead to the formal development of real analysis.2. Comprehend rigorous arguments developing the theory underpinning real analysis.3. Demonstrate an understanding of limits and how they are used in sequences, series, differentiation and integration.4. Construct rigorous mathematical proofs of basic results in real analysis.5. Appreciate how abstract ideas and rigorous methods in mathematical analysis can be applied to important practical problems.

PROGRAM OUTCOMES FOR ACADEMIC YEAR 2021-22

DEPARTMENT OF MATHEMATICS

SEMESTER-III

SEC-I

NAME OF THE PAPER	B.Sc. (MATHEMATICS)
PAPER CODE	SEC – I:
PAPER NAME	Theory of Equations
Learning Objective	Students learn the relation between roots and coefficients of a polynomial equation, Descartes's rule of signs in finding the number of positive and negative roots if any of a polynomial equation besides some other concepts.
Learning Outcomes	By using the concepts learnt the students are expected to solve some of the polynomial equations.

PROGRAM OUTCOMES FOR ACADEMIC YEAR 2021-22

DEPARTMENT OF MATHEMATICS SEMESTER-IV

PAPER CODE	DSC – 1D
PAPER NAME	Algebra
Learning Objective	<ol style="list-style-type: none">1. Present the relationships between abstract algebraic structures with familiar numbers systems such as the integers and real numbers.2. Present concepts of and the relationships between operations satisfying various properties (e.g. commutative property).3. Present concepts and properties of various algebraic structures.4. Discuss the importance of algebraic properties relative to working within various number systems.5. Develop the ability to form and evaluate conjectures
Learning Outcomes	<p>After the completion of the course, Students will be able to</p> <ol style="list-style-type: none">1. Understand the importance of algebraic properties with regard to working within various number systems.2. Extend group structure to finite permutation groups (Cayley's Theorem).3. Generate groups given specific conditions.4. Investigate symmetry using group theory.5. Understand the three major concrete models of Boolean algebra: the algebra of sets, the algebra of electrical circuits, and the algebra of logic.

PROGRAM OUTCOMES FOR ACADEMIC YEAR 2021-22

DEPARTMENT OF MATHEMATICS

SEMESTER-III

SEC-III

NAME OF THE PAPER	B.Sc. (MATHEMATICS)
PAPER CODE	SEC - III
PAPER NAME	Number Theory
Learning Objective	Students will be exposed to some of the jewels like Fermat's theorem, Euler's theorem in the number theory.
LEARNING OUTCOMES	Student uses the knowledge acquired solving some divisor problems

PROGRAM OUTCOMES FOR ACADEMIC YEAR 2021-22

DEPARTMENT OF MATHEMATICS

SEMESTER-V

Paper –V

NAME OF THE PAPER	B.Sc. (MATHEMATICS)
PAPER CODE	DSC – E
PAPER NAME	Linear Algebra
Learning Objective	<ol style="list-style-type: none">1. Solve systems of linear equations,2. Analyse vectors in geometrically and algebraically,3. Recognize the concepts of the terms span, linear independence, basis, and dimension, and apply these concepts to various vector spaces and subspaces,4. Use matrix algebra and the related matrices to linear transformations,5. Compute and use determinants,6. Compute and use eigenvectors and eigenvalues7. Determine and use orthogonally, and8. Use technological tools such as computer algebra systems or graphing calculators for visualization and calculation of linear algebra concepts.
Learning Outcomes	<p>After the completion of the course, Students will be able to</p> <ol style="list-style-type: none">1. Identify and construct linear transformations of a matrix.2. Characterize linear transformations as onto, one-to-one.3. Solve linear systems represented as linear transforms.4. Express linear transforms in other forms, such as matrix equations, and vector equations.5. Characterize a set of vectors and linear systems using the concept of linear independence


PROGRAM OUTCOMES FOR ACADEMIC YEAR 2021-22


DEPARTMENT OF MATHEMATICS


SEMESTER-VI

Paper -VI

NAME OF THE PAPER	B.Sc. (MATHEMATICS)
PAPER CODE	DSE - 1F/C
PAPER NAME	NUMERICAL ANALYSIS
Learning Objective	To get basic knowledge about Circle, Cone, Parabola, Hyperbola, Ellipse etc. 2. To understand the concepts & advance topics related to two & three dimensional geometry. 3. To study the applications of conics. 4. To study the application of Sphere, cone and cylinder. 5. To study how to trace the curve.
LEARNING OUTCOMES	After the completion of the course, Students will be able to 1. Understand geometrical terminology for angles, triangles, quadrilaterals and circles. 2. Measure angles using a protractor. 3. Use geometrical results to determine unknown angles. 4. Recognise line and rotational symmetries. 5. Find the areas of triangles, quadrilaterals and circles and shapes based on these.


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TELANGANA TRIBAL WELFARE RESIDENTIAL DEGREE COLLEGE (MEN) NAGARKURNOOL

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✉ : ttwrdcboys.nagarkurnool@gmail.com; ☎ : 8074582331, 7901097703.



PROGRAM OUTCOMES FOR ACADEMIC YEAR 2022-23

DEPARTMENT OF MATHEMATICS SEMESTER-I

NAME OF THE PAPER	MATHEMATICS-I
PAPER CODE	DSC – 1A
PAPER NAME	Differential & Integral Calculus
Learning Objective	The course is aimed at exposing the students to some basic notions in differential calculus
Learning Outcomes	<p>Explain the relationship between the derivative of a function as a function and the notion of the derivative as the slope of the tangent line to a function at a point.</p> <ol style="list-style-type: none"> 1) Compare and contrast the ideas of continuity and differentiability. 2) To inculcate to solve algebraic equations and inequalities involving the sequence root and modulus function 3) To able to calculate limits in indeterminate forms by a repeated use of L' Hospital rule. 4) To know the claim rule and use it to find derivatives of composite functions. 5) To find maxima and minima, critical points and inflection points of functions and to determine the concavity of curves. 6) To able to evaluate integrals of rational functions by partial fractions.

PROGRAM OUTCOMES FOR ACADEMIC YEAR 2022-23

DEPARTMENT OF MATHEMATICS SEMESTER-II

NAME OF THE PAPER	MATHEMATICS-II
PAPER CODE	DSC – 1B
PAPER NAME	Differential Equations
Learning Objective	<ol style="list-style-type: none">1. Evaluate first order differential equations including separable, homogeneous, exact, and linear.2. Show existence and uniqueness of solutions.3. Solve second order and higher order linear differential equations.4. Create and analyse mathematical models using higher order differential equations to solve application problems such as harmonic oscillator and circuits.5. Solve differential equations using variation of parameters6. Solve linear systems of ordinary differential equations
Learning Outcomes	<p>After the completion of the course, Students will be able to</p> <ol style="list-style-type: none">1. Student will be able to solve first order differential equations utilizing the standard techniques for separable, exact, linear, homogeneous, or Bernoulli cases.2. Student will be able to find the complete solution of a nonhomogeneous differential equation as a linear combination of the complementary function and a particular solution.3. Student will be introduced to the complete solution of a nonhomogeneous differential equation with constant coefficients by the method of undetermined coefficients.4. Student will be able to find the complete solution of a differential equation with constant coefficients by variation of parameters.5. Student will have a working knowledge of basic application problems described by second order linear differential equations with constant coefficients.

PROGRAM OUTCOMES FOR ACADEMIC YEAR 2022-23

DEPARTMENT OF MATHEMATICS

SEMESTER-III

NAME OF THE PAPER	B.Sc. (MATHEMATICS)
PAPER CODE	DSC – 1C
PAPER NAME	REAL ANALYSIS-III
Learning Objective	<p>The student will:</p> <ol style="list-style-type: none"> 1. Define the real numbers, least upper bounds, and the triangle inequality. 2. Define functions between sets; equivalent sets; finite, countable and uncountable sets. Recognize convergent, divergent, bounded, Cauchy and monotone sequences. 3. Calculate the limit superior, limit inferior, and the limit of a sequence. 4. Recognize alternating, convergent, conditionally and absolutely convergent series. 5. Determine if subsets of a metric space are open, closed, connected, bounded, totally bounded and/or compact. 6. Determine if a function on a metric space is discontinuous, continuous, or uniformly continuous.
Learning Outcomes	<p>After the completion of the course, Students will be able to</p> <ol style="list-style-type: none"> 1. Describe fundamental properties of the real numbers that lead to the formal development of real analysis. 2. Comprehend rigorous arguments developing the theory underpinning real analysis. 3. Demonstrate an understanding of limits and how they are used in sequences, series, differentiation and integration. 4. Construct rigorous mathematical proofs of basic results in real analysis. 5. Appreciate how abstract ideas and rigorous methods in mathematical analysis can be applied to important practical problems.

PROGRAM OUTCOMES FOR ACADEMIC YEAR 2022-23

DEPARTMENT OF MATHEMATICS

SEMESTER-III

SEC-I

NAME OF THE PAPER	B.Sc. (MATHEMATICS)
PAPER CODE	SEC – I:
PAPER NAME	Theory of Equations
Learning Objective	Students learn the relation between roots and coefficients of a polynomial equation, Descartes's rule of signs in finding the number of positive and negative roots if any of a polynomial equation besides some other concepts.
LEARNING OUTCOMES	By using the concepts learnt the students are expected to solve some of the polynomial equations.

PROGRAM OUTCOMES FOR ACADEMIC YEAR 2022-23

DEPARTMENT OF MATHEMATICS

SEMESTER-IV

PAPER CODE	DSC – 1D
PAPER NAME	Algebra
Learning Objective	<ol style="list-style-type: none">1. Present the relationships between abstract algebraic structures with familiar numbers systems such as the integers and real numbers.2. Present concepts of and the relationships between operations satisfying various properties (e.g. commutative property).3. Present concepts and properties of various algebraic structures.4. Discuss the importance of algebraic properties relative to working within various number systems.5. Develop the ability to form and evaluate conjectures
Learning Outcomes	<p>After the completion of the course, Students will be able to</p> <ol style="list-style-type: none">1. Understand the importance of algebraic properties with regard to working within various number systems.2. Extend group structure to finite permutation groups (Cayley's Theorem).3. Generate groups given specific conditions.4. Investigate symmetry using group theory.5. Understand the three major concrete models of Boolean algebra: the algebra of sets, the algebra of electrical circuits, and the algebra of logic.

PROGRAM OUTCOMES FOR ACADEMIC YEAR 2022-23

DEPARTMENT OF MATHEMATICS

SEMESTER-III

SEC-III

NAME OF THE PAPER	B.Sc. (MATHEMATICS)
PAPER CODE	SEC – III
PAPER NAME	Number Theory
Learning Objective	Students will be exposed to some of the jewels like Fermat's theorem, Euler's theorem in the number theory.
Learning Outcomes	Student uses the knowledge acquired solving some divisor problems

PROGRAM OUTCOMES FOR ACADEMIC YEAR 2022-23

DEPARTMENT OF MATHEMATICS

SEMESTER-V

Paper -V

NAME OF THE PAPER	B.Sc. (MATHEMATICS)
PAPER CODE	DSC – E
PAPER NAME	Linear Algebra
Learning Objective	<ol style="list-style-type: none">1. Solve systems of linear equations,2. Analyse vectors in geometrically and algebraically,3. Recognize the concepts of the terms span, linear independence, basis, and dimension, and apply these concepts to various vector spaces and subspaces,4. Use matrix algebra and the related matrices to linear transformations,5. Compute and use determinants,6. Compute and use eigenvectors and eigenvalues7. Determine and use orthogonally, and 8. Use technological tools such as computer algebra systems or graphing calculators for visualization and calculation of linear algebra concepts.
LEARNING OUTCOMES	<p>After the completion of the course, Students will be able to</p> <ol style="list-style-type: none">1. Identify and construct linear transformations of a matrix.2. Characterize linear transformations as onto, one-to-one.3. Solve linear systems represented as linear transforms.4. Express linear transforms in other forms, such as matrix equations, and vector equations.5. Characterize a set of vectors and linear systems using the concept of linear independence

PROGRAM OUTCOMES FOR ACADEMIC YEAR 2022-23

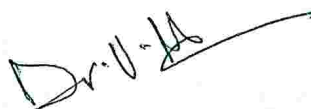
DEPARTMENT OF MATHEMATICS SEMESTER-VI Paper –VI

NAME OF THE PAPER	B.Sc. (MATHEMATICS)
PAPER CODE	DSE – 1F/C
PAPER NAME	NUMERICAL ANALYSIS
Learning Objective	To get basic knowledge about Circle, Cone, Parabola, Hyperbola, Ellipse etc. 2. To understand the concepts & advance topics related to two & three dimensional geometry. 3. To study the applications of conics. 4. To study the application of Sphere, cone and cylinder. 5. To study how to trace the curve.
LEARNING OUTCOMES	After the completion of the course, Students will be able to 1. Understand geometrical terminology for angles, triangles, quadrilaterals and circles. 2. Measure angles using a protractor. 3. Use geometrical results to determine unknown angles. 4. Recognise line and rotational symmetries. 5. Find the areas of triangles, quadrilaterals and circles and shapes based on these.



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IQAC Co-ordinator

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TTWR Degree & PG College (M)
College Code: 3391 (P.U.)
N. Kurnool-509209 (A)



Principal

Principal
TTWR Degree College (B),
Nagar Kurnool - 509 209



PROGRAM OUTCOMES FOR ACADEMIC YEAR 2023-24

DEPARTMENT OF MATHEMATICS SEMESTER-I

NAME OF THE PAPER	MATHEMATICS-I
PAPER CODE	DSC – 1A
PAPER NAME	Differential & Integral Calculus
Learning Objective	The course is aimed at exposing the students to some basic notions in differential calculus
Learning Outcomes	<p>Explain the relationship between the derivative of a function as a function and the notion of the derivative as the slope of the tangent line to a function at a point.</p> <ol style="list-style-type: none"> 1) Compare and contrast the ideas of continuity and differentiability. 2) To inculcate to solve algebraic equations and inequalities involving the sequence root and modulus function 3) To able to calculate limits in indeterminate forms by a repeated use of L' Hospital rule. 4) To know the claim rule and use it to find derivatives of composite functions. 5) To find maxima and minima, critical points and inflection points of functions and to determine the concavity of curves. 6) To able to evaluate integrals of rational functions by partial fractions.

PROGRAM OUTCOMES FOR ACADEMIC YEAR 2023-24

DEPARTMENT OF MATHEMATICS SEMESTER-II

NAME OF THE PAPER	MATHEMATICS-II
PAPER CODE	DSC – 1B
PAPER NAME	Differential Equations
<p>Learning Objective</p>	<ol style="list-style-type: none"> 1. Evaluate first order differential equations including separable, homogeneous, exact, and linear. 2. Show existence and uniqueness of solutions. 3. Solve second order and higher order linear differential equations. 4. Create and analyse mathematical models using higher order differential equations to solve application problems such as harmonic oscillator and circuits. 5. Solve differential equations using variation of parameters 6. Solve linear systems of ordinary differential equations
<p>Learning Outcomes</p>	<p>After the completion of the course, Students will be able to</p> <ol style="list-style-type: none"> 1. Student will be able to solve first order differential equations utilizing the standard techniques for separable, exact, linear, homogeneous, or Bernoulli cases. 2. Student will be able to find the complete solution of a nonhomogeneous differential equation as a linear combination of the complementary function and a particular solution. 3. Student will be introduced to the complete solution of a nonhomogeneous differential equation with constant coefficients by the method of undetermined coefficients. 4. Student will be able to find the complete solution of a differential equation with constant coefficients by variation of parameters. 5. Student will have a working knowledge of basic application problems described by second order linear differential equations with constant coefficients.

PROGRAM OUTCOMES FOR ACADEMIC YEAR 2023-24

DEPARTMENT OF MATHEMATICS SEMESTER-III

NAME OF THE PAPER	B.Sc. (MATHEMATICS)
PAPER CODE	DSC – 1C
PAPER NAME	REAL ANALYSIS-III
Learning Objective	<p>The student will:</p> <ol style="list-style-type: none"> 1. Define the real numbers, least upper bounds, and the triangle inequality. 2. Define functions between sets; equivalent sets; finite, countable and uncountable sets. Recognize convergent, divergent, bounded, Cauchy and monotone sequences. 3. Calculate the limit superior, limit inferior, and the limit of a sequence. 4. Recognize alternating, convergent, conditionally and absolutely convergent series. 5. Determine if subsets of a metric space are open, closed, connected, bounded, totally bounded and/or compact. 6. Determine if a function on a metric space is discontinuous, continuous, or uniformly continuous.
Learning Outcomes	<p>After the completion of the course, Students will be able to</p> <ol style="list-style-type: none"> 1. Describe fundamental properties of the real numbers that lead to the formal development of real analysis. 2. Comprehend rigorous arguments developing the theory underpinning real analysis. 3. Demonstrate an understanding of limits and how they are used in sequences, series, differentiation and integration. 4. Construct rigorous mathematical proofs of basic results in real analysis. 5. Appreciate how abstract ideas and rigorous methods in mathematical analysis can be applied to important practical problems.

PROGRAM OUTCOMES FOR ACADEMIC YEAR 2023-24

DEPARTMENT OF MATHEMATICS SEMESTER-III

SEC-I

NAME OF THE PAPER	B.Sc. (MATHEMATICS)
PAPER CODE	SEC - I:
PAPER NAME	Theory of Equations
Learning Objective	Students learn the relation between roots and coefficients of a polynomial equation, Descartes's rule of signs in finding the number of positive and negative roots if any of a polynomial equation besides some other concepts.
Learning Outcomes	By using the concepts learnt the students are expected to solve some of the polynomial equations.

PROGRAM OUTCOMES FOR ACADEMIC YEAR 2023-24

DEPARTMENT OF MATHEMATICS

SEMESTER-IV

PAPER CODE	DSC – 1D
PAPER NAME	Algebra
Learning Objective	<ol style="list-style-type: none">1. Present the relationships between abstract algebraic structures with familiar numbers systems such as the integers and real numbers.2. Present concepts of and the relationships between operations satisfying various properties (e.g. commutative property).3. Present concepts and properties of various algebraic structures.4. Discuss the importance of algebraic properties relative to working within various number systems.5. Develop the ability to form and evaluate conjectures
Learning Outcomes	<p>After the completion of the course, Students will be able to</p> <ol style="list-style-type: none">1. Understand the importance of algebraic properties with regard to working within various number systems.2. Extend group structure to finite permutation groups (Cayley's Theorem).3. Generate groups given specific conditions.4. Investigate symmetry using group theory.5. Understand the three major concrete models of Boolean algebra: the algebra of sets, the algebra of electrical circuits, and the algebra of logic.

PROGRAM OUTCOMES FOR ACADEMIC YEAR 2023-24

DEPARTMENT OF MATHEMATICS SEMESTER-III

SEC-III

NAME OF THE PAPER	B.Sc. (MATHEMATICS)
PAPER CODE	SEC – III
PAPER NAME	Number Theory
Learning Objective	Students will be exposed to some of the jewels like Fermat's theorem, Euler's theorem in the number theory.
Learning Outcomes	Student uses the knowledge acquired solving some divisor problems

PROGRAM OUTCOMES FOR ACADEMIC YEAR 2023-24

DEPARTMENT OF MATHEMATICS

SEMESTER-V

Paper –V

NAME OF THE PAPER	B.Sc. (MATHEMATICS)
PAPER CODE	DSC – E
PAPER NAME	Linear Algebra
Learning Objective	<ol style="list-style-type: none">1. Solve systems of linear equations,2. Analyse vectors in geometrically and algebraically,3. Recognize the concepts of the terms span, linear independence, basis, and dimension, and apply these concepts to various vector spaces and subspaces,4. Use matrix algebra and the related matrices to linear transformations,5. Compute and use determinants,6. Compute and use eigenvectors and eigenvalues7. Determine and use orthogonally, and 8. Use technological tools such as computer algebra systems or graphing calculators for visualization and calculation of linear algebra concepts.
Learning Outcomes	<p>After the completion of the course, Students will be able to</p> <ol style="list-style-type: none">1. Identify and construct linear transformations of a matrix.2. Characterize linear transformations as onto, one-to-one.3. Solve linear systems represented as linear transforms.4. Express linear transforms in other forms, such as matrix equations, and vector equations.5. Characterize a set of vectors and linear systems using the concept of linear independence

PROGRAM OUTCOMES FOR ACADEMIC YEAR 2023-24

DEPARTMENT OF MATHEMATICS

SEMESTER-VI

Paper –VI

NAME OF THE PAPER	B.Sc. (MATHEMATICS)
PAPER CODE	DSE – 1F/C
PAPER NAME	NUMERICAL ANALYSIS
Learning Objective	<p>To get basic knowledge about Circle, Cone, Parabola, Hyperbola, Ellipse etc. 2. To understand the concepts & advance topics related to two & three dimensional geometry.</p> <p>3. To study the applications of conics.</p> <p>4. To study the application of Sphere, cone and cylinder.</p> <p>5. To study how to trace the curve.</p>
Learning Outcomes	<p>After the completion of the course, Students will be able to</p> <p>1. Understand geometrical terminology for angles, triangles, quadrilaterals and circles.</p> <p>2. Measure angles using a protractor.</p> <p>3. Use geometrical results to determine unknown angles.</p> <p>4. Recognise line and rotational symmetries.</p> <p>5. Find the areas of triangles, quadrilaterals and circles and shapes based on these.</p>


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IQAC Co-ordinator


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