

**TELANGANA TRIBAL WELFARE RESIDENTIAL DEGREE COLLEGE
FOR WOMEN (TTWRDCW) SURYAPET**

DEPARTMENT OF MATHEMATICS

COURSE OUTCOMES (Cos)

B.SC, M. PC

(Maths, Physics & Chemistry)

AND

B.SC, M. PCS

(Maths, Physics & Com.sci)

Academic year- 2023-2024 to 2017-2018

Dept. of Mathematics

M. Sunitha

Vijaya Lakshmi Singh

HOD of Physical Sciences

M. Sunitha

Dept. of Maths

Principal

S. Suneela

TTWRDCW Suryapet

TELANGANA TRIBAL WELFARE RESIDENTIAL DEGREE COLLEGE FOR
WOMEN SURYAPET

DEPARTMENT OF MATHEMATICS

Academic year- 2023- 2024

COURSE OUTCOME

COURSE TITLE: B.Sc. MATHEMATICS

CREDITS: 6

DEPARTMENT: Mathematics

B.SC Mathematics I Year, Semester -I

COURSE TITLE: DIFFERENTIAL AND INTEGRAL CALCULUS (R-19)
COURSE CODE:BS:101

SL.NO	COURSE LEARNING OUTCOMES	BLOOMS TAXONOMY CLASSIFICATION
CO1	Find higher order derivatives and apply the homogeneous functions of Euler's theorem and to solve problems related to such derivatives.	III(Apply)
CO2	To find maxima and minima, critical points and inflection points of functions and to determine the concavity of curves.	I (Remember)
CO3	Apply their knowledge in polar curves, pedal equation of a curve, find arc length of a curve, arc length of parametric curves and asymptotes	III(Apply)
CO4	Apply the integral calculus to find lengths of plane curves and to find area of the Volumes and Surfaces of revolution.	III(Apply)
CO5	Interpret the Taylor's theorem and Maxima and minima of functions of two variable	Analyze-IV

B.SC Mathematics I year, Semester -II

COURSE TITLE: DIFFERENTIAL EQUATION (R-19)

COURSE CODE:BS 201

SI.NO	COURSE LEARNING OUTCOMES	BLOOMS TAXONOMY CLASSIFICATION
CO1	Identify differential equations that can be solved by each of three methods- direct integration, separation of variables and integrating factor method-and use the appropriate method to solve them.	Analyze-IV
CO2	Describe the terms ‘exponential growth/decay’, ‘proportionate growth rate’ and ‘doubling/halving time’ when applied to population models, and the terms exponential decay’, ‘decay constant’ and ‘half-life’ when applied to radioactivity.	III(Apply)
CO3	Solve the methods of undetermined coefficient & variation of parameter.	III(Apply)
CO4	Solve the methods of Cauchy-Euler Equation -linear differential equations with non-constant coefficient.	III(Apply)
CO5	Know the methods of finding solution s of differential equations of the first order but not of the first degree.	Remember-I

B.SC Mathematics II year, Semester -III
SKILL ENHANCEMENT COURSE(SEC)

COURSE TITLE - THEORY OF EQUATIONS

SL.NO	COURSE LEARNING OUTCOMES	BLOOMS TAXONOMY CLASSIFICATION
CO1	Understand the fundamental concepts of Polynomials equations, real & imaginary Roots of algebra	Understand-II
CO2	Evaluate the sum of the r th power of the roots using Newton's theorem	Apply-III
CO3	Solve the equation using transformation and reciprocal equation.	Apply-III
CO4	Solve the Arithmetic, Geometric & Harmonic Progressions.	Apply-III

B.SC Mathematics II year, Semester -III

**COURSE TITLE- REAL ANALYSIS (R-19)
COURSE CODE: BS:301**

SL.NO	COURSE LEARNING OUTCOMES	BLOOMS TAXONOMY CLASSIFICATION
CO1	Get the clear idea about the real numbers and real valued functions. Obtain the skills of analyzing the concepts and applying appropriate methods for testing convergence of a sequence/ series.	Apply-III
CO2	Describe the theory of sequences and series, Continuity, differentiation and integration.	Apply-III
CO3	Explain the concept of limit of a function to prove properties of Continuous functions and the derivative of a function.	Understand-I
CO4	Test the Riemann integration of a function and its properties in detail, leading to fundamental theorem of calculus and Mean value theorems	Apply-III
CO5	Outline the following concepts-upper sum, lower sum & Riemann Inerrability.	Analyze-IV

B.SC Mathematics II year, Semester -IV

COURSE TITLE: ALGEBRA (R-19)

COURSE CODE: BS:401

SL.NO	COURSE LEARNING OUTCOMES	BLOOMS TAXONOMY CLASSIFICATION
CO1	Demonstrate when a binary algebraic structure forms a group. Construct Cayley 's tables. Determine possible subgroups of a group and identify normal subgroups of a group.	Apply-III
CO2	Examine symmetric and permutation groups and explain group and subgroup orders using Lagrange's theorem.	Analyze-IV
CO3	Identify factor group, cyclic subgroups and their generators. Implement group axioms and apply a range of mathematical techniques to solve a variety of quantitative problems.	Understand-II
CO4	Explain the concepts of commutative ring theory and special structures like Boolean algebras and Boolean rings and to know the relationship between ring, Boolean algebra and lattice.	Evaluate-V

B.SC Mathematics II year, Semester -IV
SKILL ENHANCEMENT (SEC)

COURSE TITLE - NUMBER THEORY

SI.NO	COURSE LEARNING OUTCOMES	BLOOMS TAXONOMY CLASSIFICATION
CO1	Understand the results involving divisibility and greatest common divisors and solve systems of linear congruence's.	Understand-II
CO2	Analyze and interpret the concepts of divisibility, congruence, greatest common divisor, prime, and prime-factorization.	Apply-III
CO3	Apply the Wilson's theorem, Wolstenholm theorem, Fermat's theorem and Euler-Fermat theorem.	Apply-III
CO4	Apply the law of quadratic reciprocity and other methods to classify numbers as primitive roots, quadratic residues, and quadratic non-residues.	Apply-III

B.SC Mathematics III year, Semester -V

COURSE TITLE: LINEAR ALGEBRA (R-19)

COURSE CODE: BS: 501

SL.NO	COURSE LEARNING OUTCOMES	BLOOMS TAXONOMY CLASSIFICATION
CO1	Understand the concept of vector spaces, subspaces, basis, dimension and their properties	Understand-II
CO2	Describe the concepts of Eigen value, Eigenvector and characteristic polynomial.	Understand-II
CO3	Evaluate the Diagonalization Matrix. Determine the rank and nullity of the space and matrix of Linear transformation.	III (Apply)
CO4	Learn the properties of inner product spaces and determine orthogonality in inner product spaces, Gram Schmidt process of orthogonalization.	Apply-III
CO5	Construct the orthonormal basis using Gram-Schmidt orthogonalization process	Create-VI

B.SC Mathematics III year, Semester -VI

COURSE TITLE: NUMERICAL ANALYSIS) (R-19)
COURSE CODE: BS; 601/A

SI.NO	COURSE LEARNING OUTCOMES	BLOOMS TAXONOMY CLASSIFICATION
CO1	Apply numerical methods to find the solution of algebraic equations using different methods under different conditions, and numerical solution of system of algebraic equations	Apply-III
CO2	Apply various interpolation methods and finite difference concepts	Apply-III
CO3	Write numerical differentiation and integration whenever and wherever routine methods are not applicable.	Apply-III
CO4	To find approximate solutions to difficult Methods in Euler's Methods -Runge Kutha Methods.	Apply-III