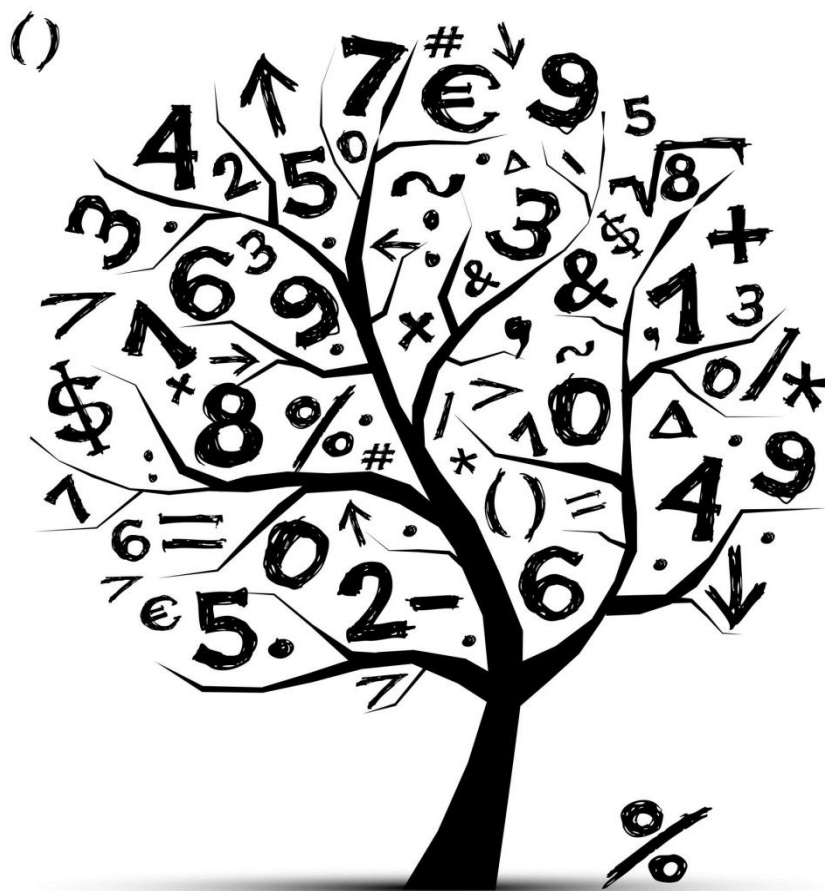


KSN GOVERNMENT DEGREE COLLEGE FOR WOMEN, ANANTHAPURAMU
DEPARTMENT OF MATHEMATICS
ATTAINMENT OF COURSE OUTCOMES



B.Sc., MATHEMATICS

COs, PSO and POs Mapping

PROGRAMME OUTCOMES (POs)

PO 1	Relevance of the Principles: To understand the basic laws of nature, fundamental principles, and the scientific theories related to various phenomena and their relevance in the day-to-day life.
PO 2	Critical Thinking, Problem Solving Skills: Acquire the skills in handling scientific instruments, planning and performing in laboratory experiments. The skills of observations and drawing logical inferences from the scientific experiments.
PO 3	Interdisciplinary learning: Realizing that knowledge of subjects in other branches such as humanities, performing arts, social sciences etc. can have greater influence and inspiration in evolving new scientific theories and inventions, and understanding the importance of interdisciplinary study in every walk of life.
PO 4	Moral and Ethical Values: To imbibe ethical, moral and social values in personal and social life leading to highly cultured, civilized and responsible personality development.
PO 5	Scientific Temper: Analyzing the given scientific data critically and systematically and the ability to draw the objective conclusions. Acquire the knowledge with facts and figures related to various subjects in pure sciences such as Botany, Chemistry, Computer Science, Electronics, Mathematics, Physics, and Zoology etc.
PO 6	Technical and Intellectual proficiency: To give a glimpse of designing solutions for communication problems with specific needs with appropriate technology thus developing healthy competition and setting parameters for excellence.

PROGRAMME SPECIFIC OUTCOMES (PSOs)

The Department of Mathematics, KSN Government Degree College for Women, Anantapur, offers Three Year (comprising 6 semesters) Undergraduate Programme in Mathematics with objective of empowering students to acquire all-inclusive understanding of Mathematics as an academic discipline. Upon completion of B. Sc. Mathematics Degree Programme successfully, the students shall acquire the following skills and competencies.

PSO 1	Create deep interest in learning mathematics.
PSO 2	Develop broad and balanced knowledge and understanding of definitions, concepts, principles and theorems.
PSO 3	Familiarize the students with suitable tools of mathematical analysis to handle issues and problems in mathematics and related sciences.
PSO 4	Enhance the ability of learners to apply the knowledge and skills acquired by them during the programme to solve specific theoretical and applied problems in mathematics.
PSO 5	Provide students/learners sufficient knowledge and skills enabling them to undertake further studies in mathematics and its allied areas on multiple disciplines concerned with mathematics
PSO 6	Encourage the students to develop a range of generic skills helpful in employment, internships and social activities.

PSO – PO MAPPING

	POs						
PSOs		1	2	3	4	5	6
	1	*	*			*	
	2	*				*	*
	3	*	*			*	
	4	*	*				*
	5			*	*	*	
	6	*			*		*

COURSE OUTCOMES (COs)

Course Code: S1-271

Course Name: Differential Equations

Upon completion of this course, the student will be able to:		PSO	PO
CO 1	Will be able to solve first order differential equations by applying different methods	2	1,5,6
CO 2	Student identifies the types of differential equations and proper method to solve differential equations	3	1,2,5
CO 3	Student will be able to make a change of variables to reduce a differential equation to a known form.	5	3,4,5
CO 4	Student will be able to find the complete solution of a non-homogeneous differential equation as a linear combination of the complementary function and a particular solution.	6	1,4,6

Course Code: S2-271

Course Name: Solid Geometry

Upon completion of this course, the student will be able to:		PSO	PO
CO 1	Understand geometrical terminology for angles, triangles, quadrilaterals and circles	1	1,2,5
CO 2	Student will get basic knowledge about Circle, Cone, Parabola, Hyperbola, Ellipse etc.	2	1,5,6
CO 3	Student will be able to solve applications of Sphere, cone and cylinder.	4	1,2,6
CO 4	Understand the concepts & advance topics related to two & three dimensional geometry.	5	3,4,5

Course Code: S3-271

Course Name: Abstract Algebra

Upon completion of this course, the student will be able to:		PSO	PO
CO 1	Student gets the knowledge of fundamental concepts including groups, subgroups, normal subgroups, homomorphism and isomorphism	1	1,2,5
CO 2	Student will be able to understand and prove fundamental results and solve algebraic problems using appropriate techniques	2	1,5,6
CO 3	Students will explore connections between abstract algebra and how these concepts can be useful in teaching high school mathematics.	4	1,2,6
CO 4	Students will be able to extend the results from group theory to study the properties of rings and fields.	5	3,4,5

Course Code: S4-271

Course Name: Real Analysis

Upon completion of this course, the student will be able to:		PSO	PO
CO 1	Student will be able to describe fundamental properties of the real numbers that lead to the formal development of real analysis	2	1,5,6
CO 2	Students can demonstrate the concept of limits and how they are used in sequences, series, differentiation and integration	3	1,2,5
CO 3	Student will be able to determine the continuity and differentiability of a function at a point and on a set	4	1,2,6
CO 4	Student will be able to define differentiate and integrate functions represented using power series expansions, including Taylor series, and solve related problems.	5	3,4,5

Course Code: S5-271

Course Name: Ring theory and Vector Calculus

Upon completion of this course, the student will be able to:		PSO	PO
CO 1	Understand the elementary concepts of rings and fields and appreciate the similarities and differences between these concepts and those of group theory	2	1,5,6
CO 2	Students will be enriched with accurate and efficient use of advanced algebraic techniques	4	1,2,6
CO 3	The differential ideas of divergence, curl, and the Laplacian along with their physical interpretations, using differential forms or tensors to represent derivative operations	3	1,2,5
CO 4	The integral ideas of the functions defined including line, surface and volume integrals	5	3,4,5

Course Code: S5-272

Course Name: Linear Algebra

Upon completion of this course, the student will be able to:		PSO	PO
CO 1	Recognize the concepts of the terms span, linear independence, basis, and dimension, and apply these concepts to various vector spaces and subspaces	2	1,5,6
CO 2	Student will be able to use matrix algebra and the related matrices to linear transformations	4	1,2,6
CO 3	Student will be able to compute and use eigenvectors and Eigen values	5	3,4,5
CO 4	Compute inner products and determine orthogonality on vector spaces, including Gram-Schmidt orthogonalization	5	3,4,5

Course Code: S6-271

Course Name: Laplace Transforms

Upon completion of this course, the student will be able to:		PSO	PO
CO 1	Find the Laplace transform of a function from the definition of a Laplace transform	2	1,5,6
CO 2	Find the Laplace transform of the exponential, cosine and sine functions	3	1,2,5
CO 3	Find the Laplace transform of derivatives and integrals	4	1,2,6
CO 4	Determine Laplace transforms and inverse Laplace transforms of various functions	5	3,4,5

Course Code: S6-272

Course Name: Integral transforms

Upon completion of this course, the student will be able to:		PSO	PO
CO 1	Use Laplace transforms to determine general or complete solutions to linear ODEs	2	1,5,6
CO 2	Able to compute Fourier series for certain functions.	2	1,5,6
CO 3	Able to solve partial differential equations e.g. heat equation, wave equation and Laplace equation, using method of separation of variables.	4	1,2,6
CO 4	Apply the Convolution Theorem to solve integro-differential equations.	5	3,4,5

Course Code: S6-273

Course Name: Numerical Analysis

Upon completion of this course, the student will be able to:		PSO	PO
CO 1	Student will be able to compare the viability of different approaches to the numerical solution of problems arising in roots of solution of non-linear equations, interpolation and approximation, numerical differentiation and integration, solution of linear systems.	1	1,2,5
CO 2	Student will be able to derive numerical methods for approximating the solution of problems of continuous mathematics	2	1,5,6
CO 3	Student will be able to solve definite integrals using numerical integration techniques and related problems	4	1,2,6
CO 4	Student will be able to analyze the error incumbent in any such numerical approximation	5	3,4,5

Course Code: S6-274

Course Name: Project Work

Upon completion of this course, the student will be able to:		PSO	PO
CO 1	Familiarize the students to use theoretical concepts into practical approach	3	1,2,5
CO 2	Provide students sufficient knowledge and skills to take up project work to get sufficient results	5	3,4,5
CO 3	To develop a range of generic skills helpful to get employment	6	1,4,6