JSS COLLEGE FOR WOMEN

CHAMARAJANAGAR

DEPARTMWENT OF MATHEMEATICS
Program and course outcomes (Non CBCS) 2017-18

Program Outcomes

Program Name: B.Sc

Discipline Course: Mathematics

PO 1	Disciplinary Knowledge: Disciplinary Knowledge : Bachelor degree in Mathematics is the culmination of in-depth knowledge of Algebra, Calculus, Geometry, differential equations and several other branches of pure and applied mathematics. This also leads to study the related areas such as computer science and other allied subjects.
PO 2	Communication Skills: Ability to communicate various mathematical concepts effectively using examples and their geometrical visualization. The skills and knowledge gained in this program will lead to the proficiency in analytical reasoning which can be used for modeling and solving of real life problems.
PO 3	**Critical thinking and analytical reasoning:** The students undergoing this programme acquire ability of critical thinking and logical reasoning and capability of recognizing and distinguishing the various aspects of real life problems.
PO 4	**Problem Solving** : The Mathematical knowledge gained by the students through this programme develop an ability to analyze the problems, identify and define appropriate computing requirements for its solutions. This programme enhances students overall development and also equip them with mathematical modelling ability, problem solving skills
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PO 6	**Information/digital Literacy**: The completion of this programme will enable the learner to use appropriate softwares to solve system of algebraic equation and differential equations.
PO7	**Self – directed learning**: The student completing this program will develop an ability of working independently and to make an in-depth study of various notions of Mathematics.
PO8	**Moral and ethical awareness/reasoning:** : The student completing this program will develop an ability to identify unethical behavior such as fabrication, falsification or misinterpretation of data and adopting objectives, unbiased and truthful actions in all aspects of life in general and Mathematical studies in particular.
PO9	**Lifelong learning**: This programme provides self directed learning and lifelong learning skills. This programme helps the learner to think independently and develop algorithms and computational skills for solving real word problems.
PO10	Ability to peruse advanced studies and research in pure and applied Mathematical sciences.

Course Outcomes

I Bsc I Semester

Course	Course Outcomes
ALGEBRA I And CALCULUS I	1.Find the higher order derivative of the product of two functions and maxima, minima, concavity, convexity & point of inflection.
	2.Solve a system of Linear equations using the rank of a matrix.
	3.Familiarize Characteristic roots and characters vectors.
	4.To find inverse of a matrix by Cayley- Hamilton theorem.
	5.Analyze different form of equations, finding their roots and understand.relation between roots and co-efficient.
	6.LearnaboutPropertiesofintegralsandReductionformulaefors omestandardfunctions
	7.Find the Angle of intersection of two curves ,Find the radius of curvature, circle Of curvature and evolutes

II BSC II Semester

Course	Course Outcomes
CALCULUS II and INTEGRAL CLACLULUS I	1.Learn to find out the limit of the function
	2.Will state the theorems on continuity and inter mediate theorem
	3.Able to find out the differentiability of the functions
	4 Students will be able to state theorems like Rolles,Lagranges and Maclaurins
	5.Will be able to find out the value for which it is belong to the interval
	6.Able to find the partial derivatives of the function
	7.Atudents will be able to find out the jacobian values
	8.Learn to derive the nth derivatives of the standard trigonometric functions

II Bsc III Semetser

Course	Course Outcomes
ALGEBRA II AND DIFFERENTIAL EQUATIONS I	1.Assess properties implied by the definitions of groups
	2.Usevariouscanonicaltypesofgroups(includingcyclicgroupsandgroupsof permutation)
	3.Analyze and demonstrate examples of subgroups, Normal Subgroups and Quotient groups.
	4.Obtainthesolutionofdifferentialequationsbythemethodofseparationof variables, homogeneous, Linear and exact differential equations
	5.Obtainanintegratingfactorwhichmayreduceagivendifferentialequation into an exact one and provide its Solution
	6.FindthecomplementaryfunctionandparticularintegralsofLineardifferential equations

II Bsc IV Semester

Course	Course Outcomes
DIFFERENTIAL EQUATIONS II AND INTEGRAL CALCULUS II	1.Method of Solution of the differential equation of the form $dx/P=dy/Q=dz/R$
	2.Use Lagrange's method for solving the first order linear Partialdifferentialequations.Learn the definition & concept of line integral
	3.Evaluations of double integral & triple integrals.
	4.Find the volume of given surface by using triple Integrals.

III Bsc V Semester (Paper V)

Course	Course Outcomes
REAL ANALYSIS AND APPLIED MATHEMATICS	1. Understand the term Convergence.
	2. Applies this term into problems.
	3. Illustrate the convergence properties of infinite series.
	4. Test the convergence of infinite series by comparison tests, D'Alembert's ratiotest, Raabe's test. Cauchy's root test
	5.Applies properties of Laplace transform
	6.Able to find the inverse laplace transform
	7.Students will be able to solve Fourier series problems

III BSc V Semester(Paper VI)

Course	Course Outcomes
ALGEBRA III AND NUMERICAL ANALYSIS	1.Defines rings ,fields, integral domain and the types of the ring
	2.Problems On Rings, Fields And Integral Domain
	3.Proves the theorems on ideals, rings and fields and other
	4.Defines Divisibility,associates and units and solves problems on the concept
	5.Defines Homomorphism ,and find the GCD of polynomials
	6.Learn the definition of Riemann integral. Uppersum sand lowersums.
	7.Criterion for integrability. Fundamental theorem of integral calculus
	8..Learn First and Second MeanValue theorems of integral calculus.

III Bsc VI Semester(Paper VII)

Course	Course Outcomes
ALGEBRA IV AND CALCULUS III	1.Understand the ideaaboutvectorsspace.
	2.AnalyzefiniteandinfinitedimensionalVectorsspaceandSubspace sovera Field and their properties,including basis structure of vectorspaces.
	3.Use the definition and properties of linear transformation and matrices oflineartransformationsandchangeofbasisincludingkernel,rangean disomorphism.
	4.Computewiththecharacteristicpolynomialseigenvectors,eigens paces.
	5.Understand the definition of improper integrals .
	6.Evaluation of improper integrals using Beta and gamma functions.
	7.Differentiate vector fields.
	8.Determine gradient of scalar point function curl and divergence of vector point functions.

III Bsc VI Semester (Paper VIII)

Course	Course Outcomes
COMPLEX ANALYSIS AND NUMERICAL ANALYSIS	1.Represent Complex Numbersal gebraicallyandgeometrically.
	2.Applythe concept and consequences of analyticity and Cauchy-Riemann equationandresultsonharmonicfunctions
	3.Evaluatecomplexcontourintegralsdirectlyandbythefundamental theorem, applytheCauchyintegraltheorem.
	4.Understandthe concepts of floating point errors in representing numbers solvingequationsusingdifferentmethods.
	5.SolvetheproblemsusingnumericalDifferentiationandIntegration
	6.Solvethesystemoflinearequationsbyusingnumericalmethods.