K.L.E. Society's
BASAVAPRABHU KORE ARTS, SCIENCE AND COMMERCE
COLLEGE, CHIKODI – 591 201.
(Accredited at 'A' with 3.26 CGPA in 3rd Cycle of A & A)
Website: www.klesbkcollegechikodi.edu.in e-mail: kles_bkcc@rediffmail.com
Ph: 08338 – 272176

DEPARTMENT OF MATHEMATICS

COURSE OUTCOMES

As on 2016-17

Course I: Differential Calculus

CO_1: Understand the concept of mean value theorems and its applications.

CO_2: Able to find out the LUB and GLB of set.

CO_3: Able to solve the examples based on absolute values and inequalities.

CO_4: Able to define the limits and continuity and to solve examples based on it.

CO_5: To understand the algebra of limits and continuity.

CO_6: Able to state L-Hospital's rule and use it to compute limit of indeterminate forms

CO_7: Understand the arithmetical properties and postulates of the real numbers.

CO_8: Able to solve the inequalities.

CO_9: Understand the relation between multiplication of two positive integers and any real number

CO_{10}: Understand the concept of Leibnitz theorem and its applications

Course II: Algebra and Trigonometry

CO_1: They will be able to formulate problems in the language of sets and perform set operations and will be able apply the fundamental principle of counting, multiplication principle.

CO_2: Able to do partition of set and to write the equivalence class of set.

CO_3: Understand the De-Morgan's laws and the concept of countable and uncountable sets.

CO_4: Understand the De-Movier's theorem and simplify the complex numbers using it.

CO_5: Describe the summation of series and the concept of logarithm of complex numbers.

CO_6: Develop skills in solving problems.

CO_7: Understand the concept of Factor theorem and remainder theorem.

CO_8: Able to use Factor theorem to solve the polynomials.

CO_9: Students will understand the different types of matrices.

CO_{10}: They understand the expansion of 4^{th} order determinants and properties of symmetric and skew symmetric determinants.

CO_{11}: Understand the meaning of rank of matrix and properties of rank of matrix.

CO_{12}: Learn to describe the relationship between polynomial long division and synthetic division.

CO_{13}: Evaluate polynomials using remainder theorem.

CO_{14}: Able to find out the roots of cubic, biquadrate and quadratic equations.

Course III: Differential and Integral Calculus

CO_1: Able to understand the concept of polar coordinates and polar curve.

CO_2: Explain the concept of polar sub tangent and polar sub normal's.

CO_3: Understand the concepts of curvature, radius of curvature in Cartesian and polar forms.

CO_4 Improving skill of solve examples on limits and continuity of functions of two variable.

CO_5: Explain the concept of Evolutes and Involutes.

Course IV: Algebra and Geometry

CO_1: Understand the concept of division algorithm properties of prime and composite numbers.

CO_2: Able to prove fundamental theorem of arithmetic, bracket function, Euler's function, Fermat and Wilson's theorem and solve examples on it.

CO_3: Understand the concept of equation of sphere, section of sphere by a plane

CO_4: Explain the concept of equation of cylinder, enveloping cylinder and right circular cylinder.

CO_5: Understand the concept of cone and its applications.

Course V: Mathematical Logic and Real Analysis

CO_1: Determine if a compound statement is negation, conjunction, disjunction, conditional or bi-conditional.

CO_2: Understand the concept of inverse, converse and contra positive and construct

the truth tables for it.

CO_3: Determine if an argument is valid or invalid by using truth tables.

CO_4: Develop skills in constructing truth tables

CO_5: Derive rule for determining the general term of on arithmetic sequence.

CO_6: Able to solve problem on that involves arithmetic sequence.

CO_7: Derive rule for determining the sum of an arithmetic series.

CO_8: Understand the concept of Cauchy's first theorem and solve the examples on it.

CO_9: Understand an example of geometric sequence and solve problems that involves the geometric sequence

Course VI: Group theory, Integral Calculus and Differential Equations

CO_1: Understand the concept of group, semi group, subgroup, cyclic group and their properties.

CO_2: Determine whether a given set and binary operation form a group by checking group axioms.

CO_3: Identify the cyclic group and their generators.

CO_4: Explain groups and subgroups using Lagrange's theorem

CO_5: Able to find the length of arc, surface areas and volume of solids of revolution for standard curves whose equations are given in Cartesian, polar and parametric forms.

CO_6: Understand the first order first degree differential equations.

CO_7: Improving skill of solve homogeneous, non-homogeneous, linear, Bernoulli's and exact differential equations.

CO_8: Able to solve non exact differential equations by finding the suitable integrating factors.

CO_9: Improving skill of solve differential equation of first order higher degree.

CO_{10}: Understand the concept of Clairtau's equation.

Course VII: Vector Calculus and Infinite Series

CO_1: Derive rule for determining the sum of n terms of geometric series and solve problems on it.

CO_1: Generalize rule for determining the sum of infinite geometric series and solve problems that involves a geometric sequence and series.

CO_3: Able to explain why a geometric series is convergent and divergent.

CO_4: Define concepts of point and vector and explain differences and similarities between them.

CO_5: Memorize algebraic definitions and explain geometric meanings of dot and cross products.

CO_6: Calculate directional derivatives and gradients.

CO_7: Able to solve the examples based on double and triple product, gradient, divergence and curl of vectors.

Course VIII: Group Theory, Fourier Series and Differential Equation

CO_1: Able to define normal subgroups, quotient groups.

CO_2: Understand the concepts of homomorphism and isomorphism of groups.

CO_3: Develop the skills on solving the problems on Fourier transforms.

CO_4: Able to define Periodic functions ,fourier series of odd and even functions.

CO_5: Develop the skills on solving the problems on linear differential equation of nth order.

CO_6: Understand the concepts of higher order exact differential equations and its applications.

Course IX: Real Analysis

CO_1: Understand the concept of beta and gamma functions and relation between them.

CO_2: Able to use beta and gamma functions to solve variety of problems.

CO_3: Understand the concept of recurrence formula and duplication formula.

CO_4: Understand the concept of double and triple integrals and develop the skills in solving the problems on it.

CO_5: Compute triple integrals in rectangular, cylindrical and spherical co-ordinates.

CO_6: Understand the Leibnitz's theorem and develop the skills in solving problems related to Leibnitz's theorem.

CO_7: Develop the skills on solving the problems on improper integrals.

Course X: Numerical Analysis

CO_1: Able to use Bisection method,iteration method Newton Raphson method to solve the examples.

CO_2: Understand the concepts of Gauss Seidal method and its applications.

CO_3: Able to define forward and backward formulae.

CO_4 Able to explain formation of first and second linear difference equation with

constant coefficients.

CO_5: Explain the concept of Eulers, Picard and Runge-Kutta method of order two.

Course XI: Dynamics and Calculus of Variation

CO_1: Able to understand the concept of dynamics and kinetics.

CO_2: Able to explain velocity and acceleration of particle along plane curve.

CO_3: Understand the concepts of tangential and normal components of velocity and acceleration.

CO_4: Explain the concept of Euler's equation- and its applications.

CO_5: Understand the concepts of Brachistochrone problem and isoperimetric problems.

Course XII: Differential Equations

CO_1: Develop the skills on solving the problems on simultaneous differential equation with two and three variables.

CO_2: Able to define concepts of Power series, ordinary and singular points.

CO_3: Understand the concepts of Frobenious method and its applications.

CO_4: Develop the skills on solving the problems on Charpits method

CO_5: Understand the concepts of Rodrigues formula and its applications.

Course XIII: Complex Analysis and Ring Theory

CO_1: Able to define analytic function, Cauchy-Reimann equations.

CO_2: Explain the Cauchy's theorem, Morera's theorem and its applications

CO_3: Explain the concepts of Residue theorem, Jordan's lemma and contour integration.

Course XIV: Topology and Laplace Transforms

CO_1: Able to define open set, closed set, closure of set and boundary points of set.

CO_2: Understand the concepts of base, sub-base, separation axioms.

CO_3: Develop the skills on solving the problems on Laplace transforms.

CO_4: Understand the concepts Dirac-delta function, unit step function and convolution theorem.

CO_5: Understand the concepts of convolution theorem and its applications.