

# GOVT. DEGREE COLLEGE (SCIENCES) NAGARKURNOOL

## DEPT. OF MATHEMATICS

### Programme Outcome: B.Sc MATHEMATICS

- Enabling students to develop a positive attitude towards mathematics as an interesting and valuable subject of study.
- A student should get a relational understanding of mathematical concepts and concerned structures, and should be able to follow the patterns involved, mathematical reasoning.
- Ability to analyze a problem, identify and define the computing requirements, which may be appropriate to its solution.
- Introduction to various courses like group theory, ring theory, field theory, metric spaces, number theory.
- Enhancing students' overall development and to equip them with mathematical modeling abilities, problem solving skills, creative talent and power of communication necessary for various kinds of employment.
- Ability to pursue advanced studies and research in pure and applied mathematical science.

### Programme Specific Outcome of B.Sc. Mathematics

- Think in a critical manner.
- Know when there is a need for information, to be able to identify, locate, evaluate, and effectively use that information for the issue or problem at hand.
- Formulate and develop mathematical arguments in a logical manner.
- Acquire good knowledge and understanding in advanced areas of mathematics and statistics, chosen by the student from the given courses.
- Understand, formulate and use quantitative models arising in social science, Business and other contexts.

Course Title: DSC I- Differential & Integral calculus

**Course Outcomes:**

- The program outcome is to give foundation knowledge for the students to understand basics of mathematics including applied aspect for developing enhanced quantitative skills and pursuing higher mathematics and research as well.
- By the time students complete the course, they will have wide ranging application of the subject and have the knowledge of real valued functions along with sequence and series. They will also be able to know about convergence of sequence and series. Also, they have knowledge about curvature, envelope and evolute and trace curve in polar curves. Cartesian curves as well as parametric curves.
- The main objective of the course is to equip the student with necessary analytic and technical skills. By applying the principles of integral he /she learns to solve a variety of practical problems in science and engineering.
- The student is equipped with standard concepts and tools at an intermediate to advance level that will serve him/her well towards taking more advance level course in mathematics.

Course Title: DSC II- Differential equations.

**Course Outcomes:**

- Student will be able to solve first order differential equations utilizing the standard techniques for separable, exact, linear, homogeneous, or Bernoulli cases.
- 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.
- Student will have a working knowledge of basic application problems described by second order linear differential equations with constant coefficients.
- Student will be able to find the complete solution of a differential equation with constant coefficients by variation of parameters.
- Demonstrate by solving various problem based on Symmetry using group theory.
- Student will be able to find the complete solution of a differential equation with constant coefficients by variation of parameters.
- Demonstrate by solving various problem based on Symmetry using group theory

Course Title: DSC III- Real Analysis

Course Outcomes:

- Describe fundamental properties of the real numbers that lead to the formal development of real analysis.
- Comprehend rigorous arguments developing the theory underpinning real analysis.
- Demonstrate an understanding of limits and how they are used in sequences, series, Construct rigorous mathematical proofs of basic results in real analysis
- Understand Integrability and theorems on integrability. Recognize the difference between point wise and uniform convergence of a sequence of functions.
- Illustrate the effect of uniform convergence on the limit function with respect to continuity, differentiability, and integrability.
- Study improper integration using Riemann integration.

Course Title: DSC IV-Group Theory

Course Outcomes:

- Understand the importance of algebraic properties with regard to working within various number systems.
- Extend group structure to finite permutation groups (Caley Hamilton Theorem).
- Generate groups given specific conditions.
- Symmetry using group theory.
- Understand the three major concrete models of Boolean algebra: the algebra of sets, the algebra of electrical circuits, and the algebra of logic.
- Students will be able to define ring and subrings.
- Study of ideals and concept related to ideal.
- Study of various integral domain in ring.
- Introduction to field.

Course Title: - DSC V- Linear Algebra

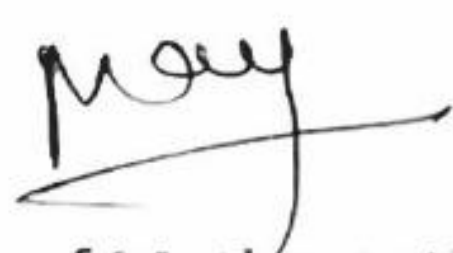
**Course Outcomes:**

- Introduction to vector space and subspace.
- Use computational techniques and algebraic skills essential for the study of systems of Linear equations, matrix algebra, vector spaces, eigenvalues and eigenvectors, Orthogonality and Diagonalization. (Computational and Algebraic Skills).

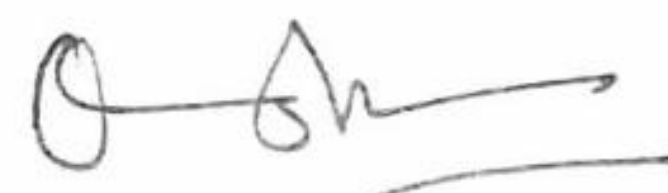
Course Title: - DSCVI-A Numerical Analysis

**Course Outcomes:**

- To apply appropriate numerical methods to solve the problem with most accuracy.
- Using appropriate numerical methods determine approximate solution of ODE and system of linear equation.
- Compare different methods in numerical analysis w.r.t accuracy and efficiency of solution.
- Student will be able to find the complete solution of a differential equation with constant coefficients by variation of parameters.
- Demonstrate by solving various problem based on Symmetry using group theory
- Application of ODE.



Dept. of Mathematics  
Govt. Degree & P.G. College (Sciences)  
NAGARKURNOOL, College Code: 3012  
Nagarkurnool-509 209, (T.S.)



PRINCIPAL  
GOVT. DEGREE COLLEGE  
(Sciences) NAGARKURNOOL  
Dist. Nagarkurnool-509 209, (T.S.)