Govt. Science College, Jabalpur

B.Sc 2nd year
Mathematics
Abstract Algebra and Linear Algebra (Major-1)
Course Learning Outcomes (CLO)

- Recognize the algebraic structures as a group, and classify them as abelian, cyclic and permutation groups, etc.
- Link the fundamental concepts of groups and symmetrical figures.
- Analyze the subgroups of cyclic groups.
- Explain the significance of the notion of co-sets, normal subgroups, and quotient groups.
- The fundamental concept of rings, fields, sub-rings, integral domains and the corresponding morphisms.
- Analyses whether a finite set of vectors in a vector space is linearly independent. Explain the concepts of basis and dimension of a vector space.
- Understand the linear transformation, rank and nullity, matrix of a linear transformation, algebra of transformations and change of basis.
- Compute the characteristic polynomial, eigenvalues, eigenvectors, and eigenspaces, as well as the geometric and basic diagonalization result.

Govt. Science College, Jabalpur

B.Sc 2nd year
Mathematics
Advanced Calculus and Partial Differential Equations(Major-2/Minor/Elective)
Course Learning Outcomes (CLO)

- Understand many properties of the real line R and sequences.
- Calculate the limit superior, the limit inferior, and the limit of bounded sequence.
- Apply the mean value theorems and Taylor's theorem.
- Apply the various tests to determine convergence and absolute convergence of an infinite series of real numbers.
- Formulate, classify and transform partial differential equations into canonical form.