VIDYABHARTI SANSTHA, WARDHA.
DR. R. G. BHOYAR ARTS, COMMERCE & SCIENCE COLLEGE
MOHANAPUR, TH-SELOO DIST-WARDHA 442104
(FORMERLY VIDYABHARTI COLLEGE)
Affiliated To Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur.
NAAC Accredited with B+ Grade
College Index : (Sr.-699) (Jr.07.08.006)

PROGRAM OUTCOME FOR B. SC. MATHEMATICS

Program Outcomes	**PO1:** To develop creative and critical thinking. **PO2:** To develop effective communication. **PO3:** To build strong leadership qualities and develop team spirit. **PO4:** To learn to become better and effective citizens of the country. **PO5:** To develop moral maturity and ethical behavior. **PO6:** To learn about the environment and sustainability process. **PO7:** To self-direct a life-long learning system. **PO8:** To learn knowledge application. **PO9:** To learn analytical, scientific reasoning and problem solving. **PO10:** To gain Information / Digital Literacy.

PROGRAM SPECIFIC OUTCOMES FOR B. SC. MATHEMATICS

Program Specific Outcomes	**PSO1:** Construct mathematical arguments, proofs and develop mathematical as well as analytical thinking **PSO2:** Critically interpret numerical data, graphical data and develop models **PSO3:** Apply mathematical knowledge to a career and research related to mathematical sciences **PSO4:** Apply critical thinking skills to solve problems which canbe modelled mathematically.

Course Outcomes B. Sc. Mathematics

Sem. I & II Paper-I: Algebra & trigonometry, Differential and difference equations	**CO1:** Understand the applications of De Moiver's theorem, properties of groups and subgroups **CO2:** Learn basic properties of first order, higher order differential equations and solve them with different methods. **CO3:** Understand to find unknown solution by using known solution, the formation of difference equation, solution of homogeneous and non-homogeneous linear equation. **CO4:** Understand the concepts of rank, Eigen values of matrices, solution of homogeneous and non-homogeneous system of equations.
Sem I & II Paper-II:Calculus, Vector calculus & improperintegrals	**CO1:** Understand basic properties of limit, continuity and derivability of functions, expansion of functions in terms of infinite series by using different methods. **CO2:** Find indeterminate forms and partial differentiation of functions with two or more variables. **CO3:** Understand basics of directional derivatives, gradient, divergence and curl. **CO4:** Evaluation of double and triple integral, improper integral and their convergence.
Sem III & IV Paper-I: Advanced calculus, Partial Differential equations & calculus of variations	**CO1:** Understand concept of limit and continuity of functions of two variables, application of Mean value theorems **CO2:** Study of convergence, divergence of sequences and series using various tests. **CO3:** Understand ordinary differential equation in more than two variables and methods of finding solution **CO4:** Study Lagrange's method, Charpit's method, Jacobi's method to solve PDE, homogeneous and non-homogeneous PDE with constant coefficients
Sem III & IV Paper-II: Differential equations & group homomorphism, Mechanics	**CO1:** Understand basic properties of Laplace transforms,inverse Laplace transforms and solution of ordinary differential equation using Laplace transform. **CO2:** Study of group homomorphism, isomorphism in details. **CO3:** Understand kinematics in two dimensions, mathematical exposition and geometrical representation of simple harmonic motion. **CO4:** Study mechanics of system of particles and Lagrange's equations.

Sem V & VI Paper-I:Analysis, Abstract algebra	**CO1:** Study Fourier series and it's convergence, existence of Riemann-Stieltjes integral, construction of analytic function, harmonic function etc. **CO2:** Understand conformal mapping, bilinear transformation. **CO3**: Study Group automorphism, inner automorphism, vector spaces and it's properties, subspaces, basis, dimensions etc **CO4:** Understand algebra of linear transformation and its inverse, matrix associated with linear map and vice versa, properties of inner product space.
Sem V & VI Paper-II: Metric space, complexintegration & Algebra,Special theory of relativity	**CO1:** Understand concepts of countable, uncountable sets, completeness, compactness, connectedness of metric space. **CO2:** Calculation of zeros and different types of singularities of analytic function, application of Cauchy's residue theoremto evaluate integral. **CO3:** Study geometrical interpretation, group properties of Lorentz transformations and basics of tensors, metrictensors etc. **CO4:** Understand equivalence of mass and energy, transformation formulae for mass, momentum and energy, relativistic equations of motion, Maxwell's equations etc.