"ज्ञान, विज्ञान आणि सुसंस्कार यांसाठी शिक्षण प्रसार"

-शिक्षणमहर्षीर डॉ. बापूजी साळुंखे

Shri Swami Vivekanand Shikshan Sanstha, Kolhapur's

Ramkrishna Paramhansa Mahavidyalaya, Osmanabad
(Affiliated to Dr. Babasaheb Ambedkar Marathwada University, Aurangabad)

|| NAAC Reaccredited 'B+' Grade || || DBT-STAR College by Govt. of India ||
|| UGC STATUS: College with Potential for Excellence ||

Course Outcomes
Department of Mathematics

	B.Sc. I year (Semester-I)
	Paper No. MAT 101: Geometry
CO1	Study different forms of equations of a plane and the relation between them.
CO2	Study different forms of equations of a line and the relation between them.
CO3	Study and understand applications of Right Line.
CO4	To study different forms of equations of a Sphere and to obtain equation of a sphere with given conditions.
CO5	Study equation of Right Circular Cone and Right Circular Cylinder.
	Paper No. MAT 102: Differential Calculus
CO1	Study Sets and Sequences. Classify Sequences according to its types.
CO2	Find limit of a function and examine the continuity of functions.
CO3	Obtain higher order derivatives of a function.
CO4	Find vector derivatives of a function.
CO5	Find Divergence and Curl of functions.
	B.Sc. I year (Semester-II)
	Paper No. MAT 201: Number Theory
CO1	Understand the Division Algorithm, Euclidean Algorithm and the fundamental theorem of Arithmetic.
CO2	Study the theory of congruences and Chinese Remainder theorem.
CO3	Study Number-Theoretic functions and Euler's generalization of Fermat's theorem
CO4	Study some Diophantine Equations.
	Paper No. MAT 202: Integral Calculus
CO1	Understand the methods of Integration and apply it to find the integration of functions.
CO2	Find integration of rational and irrational algebraic functions.
CO3	Understand definite integral as the limit of a sum.
CO4	Understand the applications of integration to obtain areas, Volumes of surfaces.
CO5	Understand Integral Transforms and its applications.

	B. Sc. II Year (Semester-III)	
	Paper No. MAT 301: Differential Equations	
CO1	Study exact and linear differential equations.	
CO2	Understand the methods of solution of linear differential equations with constant coefficients.	
CO3	Understand the methods of finding solutions of linear equations with variable coefficients.	
CO4	Understand the methods of solutions of ordinary differential equations with more than two variables.	
	Paper No. MAT 302: Laplace and Fourier Transforms	
CO1	Study of Beta Gamma functions and their properties.	
CO2	Determine Laplace transform for various functions and understand the properties of Laplace transform	
CO3	Obtain inverse Laplace transform, apply properties of inverse Laplace transform.	
CO4	Applications of Laplace transforms to solve differential equations	
CO5	Determine Fourier transform and understand its properties	
	Paper No. MAT 303: Mechanics I	
CO1	Study of resultant of forces acting on a particle	
CO2	Understanding the conditions of equilibrium of forces acting on a particle.	
CO3	Study of moment of forces, couples acting on rigid body and their applications.	
CO4	Understanding centre of gravity and study Centre of gravity of some uniform bodies.	
	B.Sc. II year (Semester-IV)	
	Paper No. MAT 401: Partial Differential Equations	
CO1	Solution of Lagrange's equation.	
CO2	Find Complete integral, Singular integral, General integral.	
CO3	Determine the solution of Partial Differential Equations using Charpit's method.	
CO4	Describe Monge's method, Method of transformation.	
	Paper No. MAT 402: Numerical Analysis	
CO1	Describe Finite Differences and apply Newton's Formulae for Interpolation.	
CO2	Explain and apply Lagrange 's and Newton divided difference formula for interpolation.	
CO3	Apply Gauss interpolation formulae, Stirling's and Bessel's formulae for interpolation.	
CO4	Apply numerical differentiation and numerical quadrature formulae.	
	Paper No. MAT 403: Mechanics II	
CO1	Find velocity and acceleration in terms of vector derivatives, curvature, angular speed and angular velocity.	
CO2	Describe radial and transverse components of velocity and acceleration, areal speed and velocity.	
CO3	Explain Newton's laws of motion, angular momentum, work, energy, vector point function, field of force.	
CO4	Describe motion under gravity, projectile, Motion of projectile, Parabola of safety, motion in resisting medium, areal velocity of central orbits, pedal equations.	

	B. Sc. III Year (Semester-V)
	Paper No. MAT 501; Real Analysis I
CO1	Understand functions and its types. Real Numbers.
CO2	Describe different types sequences of real numbers and their behaviors.
CO3	Understand types of series and its convergence.
CO4	Understand of Jacobians of functions.
	Paper No. MAT 502: Abstract Algebra I
CO1	Understand algebraic structure group, its types and relation between them.
CO2	Understand subgroups, Normal subgroup, its properties.
CO3	Understand homomorphism theorems of groups.
CO4	Understand ring theory: Describe types of ring.
	Paper No. MAT 504: Ordinary Differential Equations I

CO1	Describe Linear equations of first order.
CO2	Solution of Linear equations of first order.
CO3	Understand Linear equations with constant coefficients.
CO4	Solution of initial value problems.

	B. Sc. III Year (Semester-VI)
	Paper No. MAT 601: Real Analysis II
CO1	Understand the concept of metric space and study of limits in metric space.
CO2	Study of continuous functions on metric spaces.
CO3	Understanding and study of connectedness, completeness, and compactness.
CO4	Understand Riemann integral and to study fundamental theorem of calculus.
CO5	Study of Fourier series.
	Paper No. MAT 602: Abstract Algebra II
CO1	Understand elementary basic concept of vector spaces.
CO2	Understand subspaces, dimension, and basis of a vector space.
CO3	Study of linear independence and bases of vector spaces.
CO4	Study of Dual spaces, Inner product spaces and Modulus.
	Paper No. MAT 604: Ordinary Differential Equations II
CO1	Understand Linear equation with variable coefficients.
CO2	Solution of initial value problem of homogeneous equation
CO3	Understand Linear equation with Regular Singular Points.
CO4	Solution of Euler equation, Solution of Bessel equation.