MARWADI SIKSHA SAMITHI

Ramnath Guljarilal Kedia College of Commerce

(Affiliated to Osmania University, NAAC Re-Accredited)|
3-1-336, Esamia Bazar, Opp. New Chaderghat Bridge, Hyderabad- 500027.

Program name: BSc. Mathematics   (2022-2023)

Program outcomes:

- Students will be aware of and able to develop solution oriented approach towards social and environmental issues.
- Students will become employable.
- Students will possess basic subject knowledge required for higher studies.
- Acquire basic practical and technical knowledge.
- Scientific temper will develop in students.

Program specific outcomes:

- A student should be able to recall basic facts about mathematics and should be able to display knowledge of conventions such as notations, terminology.
- A student should get adequate exposure to global and local concerns that explore them many aspects of mathematical sciences.
- Students are equipped with problem solving skills, creative talent and power of communication necessary for various kinds of employment.
- Enabling students to develop positive attitude towards mathematics as an interesting and valuable subjects of study.

Course Outcomes:

paper	semester	Course name	Learning outcome
DSC-I	I	Differential and integral calculus	Students are able to understand the geometrical representation of function of two variables, define the concepts of limit and continuity, study about higher order partial derivatives, understand homogeneous function, solve the problems on Taylor's series and Lagrange's method, discuss about various revolutions.

DSC-II	II	Differential equations	To learn ordinary, partial differential equations and their problems, understand integrating factors in different methods, imagine exact total differential equations, using various methods to finding a general solution of F(x,y,z)=0,understand different concepts involved in applications of first order differential equations, solve the problems on homogeneous , non homogeneous linear differential equations.
DSC-III	III	Real analysis	Student in a position to explain sequence, convergence ,limit, monotone sequence, sub sequence, limit inferior ,limit superior, explain the steps involved in BOLZANO -WIERSTRASS theorem, explain steps involved in intermediate value theorem. Explain the fundamental theorem calculus-I, II.
SEC –(IIB)	III	Logic and sets	To learn concepts in set theory and logic, appreciate its importance in the development of computer science, students recognize different connectives and draw truth tables, recognize the uses of quantifiers, explain the different steps involved in the theorem's proofs, explain different set operations, laws of set theory, Venn diagram, define and explain probability and axioms on probability, discuss conditional probability, independence,discrete random variable concept problems.
DSC-IV	IV	Algebra	Student in a position to define GROUP and understand about closure law ,associative law ,identity ,inverse , abelian group, understand the concept of sub group, explain the steps involved in Lagrange's theorem, Fermat's little theorem, discuss about homomorphism ,kernel, isomorphism, auto orphism ,explain about Ring, properties, subbing ,field, ideal ,integral domain and solve problems related to them, deeply understand the theorems of characteristic of a Ring, explain division algorithm and consequences.

SEC IV(B)	IV	Vector Calculus	To realize vector calculus used to address the some of the problems in physics, understand about line integral evaluation, conservative vector fields, thing about surface integrals, explain pipe evaluation of line integral, student about evaluation of volume integrals, deeply understand and solve the problems related to gradient ,divergence, curl concepts.
DSC-V	V	Linear Algebra	Define and explain the properties of vector space, sub space, solve example problems, contrast between Null A and Col A, explain unique representation theorem ,study several interesting and useful relationship between these sub spaces in terms of basis, dimension ,rank, study about Eigen values ,Eigen vectors, characteristic equation ,explain the steps involved in diagonalization theorem, solve the problems on orthogonal vectors, orthogonal components.
GE-V(A)	V	Basic mathematics	To understand the basic concepts of coordinate geometry like Cartesian coordinate system, polar coordinates, define different formulae of triangle, explain different forms of equation of straight-line, define angle between two lines, point of intersection of two lines, position of a point with respect to given line, understand definitions, notations ,operations of matrices ,determinant etc, study the concept of linear system of equations in which learn rank of a matrix, application of rank concept, solution to the linear system of equations, explain steps involved in Cramer's rule, inversion method.
DSC-VI(C)	VI	Analytical Solid geometry	Student remember basic concepts like coordinates, the plane, the line, interpretation of equations-loci, transformation of coordinates, explain the general equations of sphere ,cone ,cylinder ,the conicoid, recognize difference between sphere cone cylinder ,conicoid, explain different formulae of sphere ,cone, right circular cone, cylinder, right circular cylinder, Solve different problems related to cone, sphere cylinder, conicoid understand the terms like tangent plane, angle of intersection, radical plane,

			intersection of a plane with a cone, plane of contact.
OPTIONAL-VI	VI	Mathematical Modeling	Understand the definition of model with different examples, search for exponential decay and radioactivity, explore case studies ,lake pollution model ,read the models of single population, increasing population models, case study on cholera-predators and prey-competing species, student formulate the heat and mass transport models in this learn basic physical laws, model for a hot water heater, understand Fourier's law, understand heat conduction through a wall, relative heat conduction ,diffusion. Explain briefly about partial differential equation concept, workout case study on detecting land mines -lake pollution.