V & VI SEMESTER - COURSE OUTCOMES
SCIENCE

B.Sc., MATHEMATICS with CA

18UMCC51

REAL ANALYSIS

Course Outcomes:

On successful completion of the course, the learners will be able to:

CO 1: Demonstrate the understanding of basic concepts of Real analysis. (K2)

CO 2: Determine whether subsets of a metric space are open, closed, complete, connected and/or compact. (K3)

CO 3: Examine whether a function on a metric space is continuous, discontinuous, or uniformly continuous. (K4)

CO 4: Comprehend arguments developing the theory behind real analysis (K2)

CO 5: Construct mathematical proofs of basic results in real analysis(K3)

18UMCC52   **MODERN ALGEBRA**

Course Outcome:

On successful completion of the course, the learners will be able to:

CO 1: Demonstrate the basic concepts like sets, relations, definition of groups (K1)

CO 2: Explain the concepts of subgroups, cosets, isomorphism, rings (K2)

CO 3: Justify the results like isomorphism in various groups (K5)

CO 4: Apply the important theorems (K3)

CO 5: Examine the properties of various groups (K4)

18UMCC53   **NUMERICAL ANALYSIS**

Course Outcomes:

On successful completion of the course, the learners will be able to:

CO 1: Identify the approximate solutions to mathematical problems. (K1)

CO 2: Understanding the roots of non-linear equations and solution of system of linear equations. (K2)

CO 3: Evaluate the accuracy of common numerical methods. (K5)

CO 4: Analyse the problems in finding the solutions for the problems involving numerical differentiation.(K4)

CO 5: Apply numerical methods for various mathematical operations and tasks such as interpolation, integration. (K3)

18UMCC54   **STATISTICS II**

Course Outcome:

On successful completion of the course, the learners will be able to:

CO 1: Remember and understanding of statistics and data analysis (K1, K2)

CO 2: Apply various types of distribution (K3)

CO 3: Analyze statistical techniques to interpret the data. (K4)

CO 4: Evaluate problems on test of significance and probability functions. (K5)

CO 5: Create sampling development and scientific attitude through Statistics. (K6)

18UMCE51   **DIFFERENTIAL EQUATIONS**

Course Outcomes:

On successful completion of the course, the learners will be able to:

CO 1: Identify linear, nonlinear, partial and ordinary differential equations. (K2)

CO 2: Apply different methods for solving differential equations. (K3)

CO 3: Evaluate ordinary and partial differential equation. (K5)

CO 4: Convert different forms into standard forms. (K4)

CO 5: Solve different types of differential equations. (K3)

18UMCE52   **FUZZY SETS**

Course Outcomes:

On successful completion of the course, the learners will be able to:

CO 1: Remember and understand the basic concepts of fuzziness. (K1, K2)

CO 2: Prepare concepts in projection and extension of the fuzzy numbers (K3)

CO 3: Conclude the properties of fuzzy relations and fuzzy sets (K4)

CO 4: Importance of the multi valued logics values and fuzzy logic values (K5)

CO 5: Compose applications of fuzzy sets and its logics. (K6)

18UMCE53   **WEB PROGRAMMING**

Course Outcome:

On successful completion of the course, the learners will be able to

CO1 :understand the concept of Internet.

CO2 :enrich the knowledge about HTML, Java Script and VBScript.

CO3 : know about the events used in Java script and VB script.

18UMCS51   **LAPLACE TRANSFORMS AND FOURIER SERIES**

Course Outcome:

On successful completion of the course, the learners will be able to

CO 1: Learn Laplace transforms and understanding its inverse. (K1, K2)
CO 2: Apply Laplace Transform to solve ordinary differential equation. (K3)
CO 3: Solve problems in inverse Laplace transform. (K3)
CO 4: Examine the Laplace transform in periodic function. (K4)
CO 5: Evaluate the Fourier series and half range Fourier series.(K5)

18UMCC61   **COMPLEX ANALYSIS**
Course Outcome:
On successful completion of the course, the learners will be able to:

CO 1: List the basic concepts of analytic function and harmonic functions. (K1)

CO 2: Express analytic property, conformal mapping and identify singularities. (K2, K3)

CO 3: Examine the basic properties of singularities, convergence of power series. (K4)

CO 4: Choose the Cauchy's integral formula or integral theorem. (K5)

CO 5: Reduce the complex integration with the help of integral formula. (K6)

18UMCC62   **LINEAR ALGEBRA**
Course Outcome:
On successful completion of the course, the learners will be able to:
CO 1: Exhibit vector space, inner product space, span of a set and understand the fundamental
       theorem of homomorphism (K1,K2)
CO 2: Characterize vector spaces and matrices. (K3)
CO 3: Apply properties of matrices and vector space (K3)
CO 4: Analyze orthogonality and bilinear forms (K4)
CO 5: Reduce quadratic form into diagonal form. (K6)

18UMCC63   **OPERATIONS RESEARCH**

Course Outcome:
On successful completion of the course, the learners will be able to:

CO 1: Illustrate linear problem, special forms and game theory. (K2)

CO 2: Evaluate game theory and linear problems. (K5)

CO 3: Compare different types of methods in solving linear problem. (K4)

CO 4: Solve linear programming problem. (K3)

CO 5: Design real life problem into a linear problem. (K6)

18UMCPR1   **PROJECT & VIVA-VOCE**

18UMCE61   **GRAPH THEORY**

Course Outcomes
On successful completion of the course, the learners will be able to:
CO 1: Demonstrate the basic concepts of graph theory. (K2)
CO 2: Develop mathematical proofs in graph theory. (K3)
CO 3: Examine types of graph and finding its index. (K4)
CO 4: Present various graph models. (K5)
CO 5: Build mathematical models using graph theory. (K6)

18UMCE62   **STOCHASTIC PROCESS**
Course Outcomes:
On successful completion of the course, the learners will be able to:
CO 1: list the definition of Markov chain and random walk. (K2)
CO 2: illustrate Stochastic Process, Markov Process. (K3)
CO 3: evaluate the transition probability matrices. (K4)
CO 4: justify the type of Markov Chain. (K5)
CO 5: model the concepts and theorems for real life problems (K6)

18UMCE63   **NUMBER THEORY**
Course Outcomes:
On successful completion of the course, the learners will be able to:
CO 1: Explain the basic concepts of numbers (K2)
CO 2: Solve congruence and number problems. (K3)
CO 3: Apply theoretical concepts in number theory (K3)
CO 4: Examine the divisibility using several methods (K4)
CO 5: Construct mathematical proofs of basic results in number theory (K3)

18UMCS61   **BOOLEAN ALGEBRA & LOGIC**
Course Outcome:
On successful completion of the course, the learners will be able to
    CO1: Understand the logical statements using the concept of propositions (K1)
    CO2: Analyse the logical statements using laws of propositions needed for computing skill (K4)
    CO3: Classify the lattice structure using its properties (K2)
    CO4: Determine the correlation between Boolean expressions. (K4)
    CO5: Apply the different methods to simplify Boolean expressions.(K3)