DEPARTMENT OF MATHEMATICS

SEMESTER-II

SUBJECT:DIFFERENTIAL CALCULUS

CODE:MAT101

COURSE OUTCOMES:

of the course students will be in a position to

CO 1: Appreciate beauty and applicability of the course.

CO 2: Deliberate in detailed vector spaces.

CO 3: Give examples of vector spaces and subspaces.

CO 4:   Understand the underlying vital basic concepts of vector space such as pivot columns and pivot positions

CO 4:   Determine the dimensions of Null space, Row space and Column space of a given matrix.

CO 5: Compute Ranks of Null space, Row space and Column space of a given matrix. CO 6:

Evaluate the eigenvalues and eigenvectors.

CO 7:   Prove and apply the concepts of eigenvalues and eigenvectors in other areas of mathematics.

CO 8: Establish the complex eigenvalues and eigenvector
CO 9: Apply Linear algebra concepts to differential equations.

CO 10: Write the characteristic equation for a given matrix.

SEMESTER-II

DIFFERENTIAL EQUATIONS

COURSE CODE:MAT201

COURSE OUTCOMES (COs):

After completion of this course, the student will be able to

CO1:   Gain the complete understanding of linear differential equations of first order and first degree.

CO2: Deliberate in depth differential equations of first order and first   degree.

CO3: Verify whether a given differential equation is exact or not.

CO4:Identify the appropriate integrating factors to make a non-exact differentiable equation to exact.

CO5: Apply and solve first order differential equations

CO6:   Equipped with the various tools to solve few types differential equations that arise in several branches of science.

SEMESTER-III

SUBJECT: REAL ANALYSIS

COURSE CODE:MAT301

COURSE OUTCOMES:

After the completion of the course students will be in a position to

CO 1: Appreciate beauty and applicability of the course.

CO 2: Deliberate in details real number systems

CO 3: Give examples of sequences and series.

CO 4:   Understand the underlying vital basic concepts of real analysis such as epsilon- delta definition of limit of a sequence and convergence of a sequence.

CO 4: Determine the continuity and uniform continuity of a function at a point.

CO 5: Compute limits of given functions

CO 6: Explain the properties of continuous functions

CO 7: Prove and apply the mean value theorems

CO 8: Elaborate the geometrical representations of mean value theorems

CO 9: Apply Taylor's and Maclaurian's theorems

CO 10: Differentiate the Darboux and Riemann integrals

CO 11: Gain the significance of the Fundamental theorem of Integral calculus in integration.

SEMESTER -IV

SUBJECT: LINEAR ALGEBRA

COURSE CODE:MAT401

COURSE OUTCOMES:

of the course students will be in a position to

CO 1: Appreciate beauty and applicability of the course.

CO 2: Deliberate in detailed vector spaces.

CO 3: Give examples of vector spaces and subspaces.

CO 4:   Understand the underlying vital basic concepts of vector space such as pivot columns and pivot positions

CO 4:   Determine the dimensions of Null space, Row space and Column space of a given matrix.

CO 5: Compute Ranks of Null space, Row space and Column space of a given matrix. CO 6: Evaluate the eigenvalues and eigenvectors.

CO 7:   Prove and apply the concepts of eigenvalues and eigenvectors in other areas of mathematics.

CO 8: Establish the complex eigenvalues and eigenvectors

SEMESTER-V

SUBJECT:NUMERICAL ANALYSIS

COURSE CODE: MAT501

COURSE OUTCOMES:

After the completion of the course students will be in a position to

CO 1:   Students realize the importance of the subject in solving some problems of algebra and calculus.

CO 2: Appreciate beauty and applicability of the course

. CO 3: Deliberate in details of numerical analysis.

CO 4: Find errors in numerical calculations.

CO 5:   Solve equations in one variable .

CO 6:   Apply bisection, iteration, false position, Newton's and Muller's methods.

CO 7:   Use Newton's formula for interpolation.

CO 8:   Apply Gauss's, Stirling's, Bessel's , Lagrange's and Newton's formulae for forward, backward and central interpolation.

CO 9: Learn numerical differentiation and numerical integration.

SEMESTER-VI

VECTOR CALCULUS

COURSE CODE:MAT601

COURSE OUTCOMES:

Students realize the way vector calculus is used to address some of the problems of physics.

After the completion of the course students will be in a position to

CO 1: Students realize the way vector calculus is used to address some of the problems of physics.

CO 2: Appreciate beauty and applicability of the course.

CO 3: Establish the work done against a force.

CO 4: Evaluate line integrals.

CO 5: Write binary and decimal representations of integers. CO 6: Determine conservative vector fields.

CO 7: Find surface integrals.

CO 8: Compute volume integrals.

CO 9:   Understand the concepts of gradient, divergence, curl and establish relations among them.