➢ Programme Specific Outcomes – (Mathematics)

- **After completing this specific programme - (BA/BCOM/BSC) – (Mathematics)**

1. . Students can solve various types of derivative and integration problems.

2. . Students can find limit of a sequence.

3. . Students can indentify convergent and divergent sequence.

4. . Students can apply various types of comparison test to check the convergence.

5. . Students can solve problems related to ODE and PDE.

6. Students can apply theorems for completeness and compactness of metric space.

7. Students can solve real world problem like heat equations, wave equations.

Head of the Department
HEAD
Dept.of Mathematics
Degloor College, Degloor

Principal

Dr. Anil Chidrawar
Principal (I/C)
A. V. Education Society's
Degloor College, Degloor Dist. Nanded

A.V. Education Society's
DEGLOOR COLLEGE, DEGLOOR

➤ <u>Course Outcomes – (Subject – Mathematics)</u>

Under Graduate (Course Outcomes)
B.A./B.Com./**B.Sc. First Year**
Semester – I (Paper-wise)

1. Name of the Paper – I –Differential Calculus

   a. .Students can find out Limit of a function

   b. . Students can apply Leibnitz theorem to find nth derivative

   c. . Students can understand MVT

   d. . Students can understand concept of pde

   e. . Students can find equation of tangent and normal

2. Name of the Paper – II- Algebra and trigonometry

   a. . Students can add and subtract two or more matrices.

   b. . Students can able to find rank of a matrix.

   c. . Students can solve system of linear equations.

   d. . Students can able to find inverse of a matrix.

   e. . Students can able to find characteristic roots and vectors.

Semester – II

1. Name of the Paper – III –Integral Calculus

   a. . Students can able to know different formulae of integration.

   b. . Students can integrate algebraic rational functions.

c. . Students can apply different methods of integrations.

d. . Students can apply reduction formulae.

e. . Students can find the area and volume of given curve

2. Name of the Paper – IV-Geometry

a. . Students can understand concept of 3 dimensional geometry

b. . Students can find the equations of plane sphere

c. . Students can find the length of perpendicular from a point to line

d. . Students can understand difference between cone and RCC

e. . Students can find the angle of intersection of 2 spheres

3. Name of the Paper – V-Practical

a. . Students can handle Matlab software.

b. . Students can plot simple graphs.

c. . Students can able to plot 2D, 3D graphs.

d. Students can able to plot pie, bar graphs.

e. Students can verify multiplication associativity property of matrices.

B.A./B.Com./B.Sc. Second Year

Semester – III

1. Name of the Paper – VI- Real Analysis I

a. . Students know basic concepts of set theory.

b. . Students can distinguish between open and closed set .

c. . Students know basic concepts of sequence and series.

d. . Students can apply different theorems to know convergence.

e. . Students can apply comparison tests.

2. Name of the Paper – VII- Group Theory

a. . Students can understand relations function, types of functions.

b. . Students can check given set is group or not.

c. . Students can solve problem of groups.

d. . Students can understand concept of cyclic groups.

e. Students can understand concept of quotient groups.

3. Name of the Paper – VIII- Ordinary differential equations

a. . Students will able to find order and degree of ODE

b. . Students can transform equations into variable separable form.

c. . Students can solve clairut's equations.

d. . Students can solve exact differential equations

e. . Students can find the solutions of linear equation with variable co-efficients.

4. SEC – I (Name of the Paper) SEC Mathematics

a. . Students will get knowledge of different math software's.

b. . Students can able to learn how to use software.

c. . Students can plot graphs.

d. . Students can solve ode.

Semester – IV

1. Name of the Paper – IX-Real Analysis II

a. . Students understand Riemann integral

b. . Students can understand difference of upper and lower sum

c. . Students can solve improper integral

d. . Students can check convergence of improper integral

e. . Students can understand various theorems related to integral

2. Name of the Paper – X- Ring Theory

a. . Students can check algebraic structure is ring or not.

b. . Students understand concept of zero divisor and nonzero divisor.

c. . Students can check isomorphism of ring.

d. . Students can understand concept of principal ideal.

e. Students can identify Euclidean ring.

3. . Name of the Paper – XI- Partial differential equations

   a. . Students can understand difference of ODE and PDE.

   b. . Students can able to find pde .

   c. . Students can use technique of separation of variables.

   d. . Students can use different methods to solve pde.

   e. . Students can able to solve real world problems.

4. SEC – II (Name of the Paper) SEC Mathematics

   a. . Students can ale to use Matlab.

   b. . Students can plot 2D,3D graphs.

   c. . Students can solve ode.

   d. . Students can solve ode with initial conditions.

B.A./B.Com./B. Sc.Third Year

Semester – V

   1. Name of the Paper – XII-Metric Spaces

   a. . Students can understand concept of metric space.

   b. . Students can check whether the function is metric or not.

   c. . Students can apply cauchy's theo.

   d. . Students can able to distinguish between compactness and connectedness.

   e. . Students can find find contraction constant.

   2. Name of the Paper – XIII- Linear Algebra

a. . Students can understand basics of vector spaces.

b. . Students can check LI and LD .

c. . Students can find characteristic roots.

d. . Students can apply different theorems to check LI.

e. . Students can solve problems related to IP spaces.

3. . Name of the Paper – XIV- Mechanics I - Statics

a. . Students can understand law of parallelogram of forces.

b. . Students can find magnitude and direction of resultant.

c. . Students can understand different theorems of equilibrium f forces

d. . Students can find vector moment of forces.

e. . Students can understand conditions of equilibrium of forces, coplanar forces.

4. SEC – III (Name of the Paper) SEC Mathematics

a. . Students can able to handle software like Scilab.

b. . Students can solve pde by software.

c. . Students can plot different plots.

d. .Students can solve problems of mechanics.

Semester – VI

1. Name of the Paper – XV- Numerical Analysis

a. . Students can find forward and backward difference.

b. . Students can understand different theorems of forward difference.

c. . Students can understand numerical quadrature.

d. . Students can solve ode by numerical technique.

e. . Students can apply Newton's ,Bessel's formula.

2. Name of the Paper – XVI – Integral Transformation

a. . Students can understand laplace transform.

b. . Students can find LT of derivative, Integral .

c. . Students can apply convolution theorem.

d. . Students can find ILT.

e. . Students can find Fourier transform of functions.

3. Name of the Paper – XVII – Mechanics II - Dyanamics

a. . Students can able to understand difference of statics and dyanamics.

b. . Students can find tangential and normal components of velocity and acceleration.

c. . Students can understand deductions of Newton's law.

d. . Students can find KE and PE.

e. . Students can find velocity of particle in terms of height.

4. SEC – IV (Name of the Paper) SEC Mathematics

a. . Students can familiar with Math's software.

b. . Students can solve problems in numerical analysis.

c. . Students can solve problems in mechanics.

d. . Students can solve problems in Integral transform.

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