Mathematics Practical

Semester – III	Subject Code: BSP41610	Lectures: 60

Objectives:

The syllabus aim in equipping the students with,

- Applying concepts studied in algorithms in Scilab programming using Scilab tools.
- An understanding of Numerical methods by writing programs in Scilab.
- An opportunity to learn new application software TORA and solve problems in Operations Research using it.
- To apply Scilab programming and graphics tools to Computational Geometry Methods.
- Encouraging the students to learn and do more and more programming and enhance.

Practical 1	To generate LCM of two given numbers using factorization.	**4**
Practical 2	Generation of prime numbers up to a given limit.	**4**
Practical 3	Difference of errors	**4**
Practical 4	Solution of non linear equations in single variable by - 1) Regula Falsi Method 2) Newton Raphson Method	**4**
Practical 5	Programs based on basic algorithm(2-3)	**8**
Practical 6	Solution of system of linear equations by 1) Gauss Jacobi Method 2) Gauss Seidel Method	**4**
Practical 7	Interpolation – I 1) Newton's Forward difference formula 2) Newton's Backward difference formula	**8**
Practical 8	Interpolation – II 1) Lagrange's interpolation formula 2) Newton's Divided difference formula	**4**
Practical 9	Primality testing algorithms 1) Sieve of Eratosthenes 2) Miller Rabin test 3) Solovey-Strassan test	**8**

***Contact hours – 12 hours**

Mathematics Practical

Semester – IV	Subject Code: BSP41610	Lectures: 60

Objectives:

The syllabus aim in equipping the students with,

- Applying concepts studied in algorithms in Scilab programming using Scilab tools.
- An understanding of Numerical methods by writing programs in Scilab.
- An opportunity to learn new application software TORA and solve problems in Operations Research using it.
- To apply Scilab programming and graphics tools to Computational Geometry Methods.
- Encouraging the students to learn and do more and more programming and enhance.

Practical 1	Numerical Integration 1) Trapezoidal Rule 2) Simpson's 1/3 Rule 3) Simpson's 3/8 Rule	4
Practical 2	To search the number from a given list using Binary search algorithm	4
Practical 3	Find maximum and minimum from a given list using divide and conquer algorithm	4
Practical 4	To find k^{th} smallest element from the list using Divide and conquer algorithm	4
Practical 5	Scilab program to solve Knapsack problem	4
Practical 6	Program based on BFS	4
Practical 7	Programs based on DFS	4
Practical 8	Greedy algorithm - Job sequencing with dead line	4
Practical 9	To generate points on standard circle ,ellipse and display those points on screen	4
Practical 10	To generate points on parabola $y^2=4ax$ and $x^2 = 4ay$.	4
Practical 11	TORA-I Solution to Linear Programming Problems using 1) Graphical Method 2) Simplex Method	4
Practical 12	TORA-II Solution to 1) Transportation Problems 2) Assignment Problems	4

***Contact hours – 12 hours**