

Rajiv Gandhi University of Knowledge Technologies



Department of Chemical Engineering

Process Modeling and Simulation

Laboratory

(CH4702)

CH4702 PROCESS MODELLING AND SIMULATION LABORATORY

Externals: 60 Marks

L-T-P

Internals: 40 Marks

0-0-3

Credits: 1.5

Course Objectives:

To make the student familiar with software and simulation of chemical processes equipments.

The following experiments have to be conducted using C/C++/MATLAB

1. Introduction to MATLAB: Loops, Branches and Control Flows
2. Solving a linear system using Gaussian elimination method
3. Finding Eigen vectors, eigen values for a linear system, Curve fitting tool box
4. Solving an ordinary differential equation, PDE etc
5. Three CSTR's in series – open loop & closed loop
6. Non isothermal CSTR
7. Isothermal batch reactor – open loop
8. Non-isothermal Batch reactor
9. Plug flow reactor
10. Heat Exchanger
11. Gravity Flow tank.
12. Bubble point & Dew point calculations
13. Binary Distillation column

Course Outcomes:

- Identify MATLAB as a simulating tool to solve chemical engineering problems
- Solve steady state chemical engineering problems using MATLAB
- Develop solutions for different ideal reactor systems
- Simulate basic Heat transfer and Mass transfer equipment