

**VEER SURENDRA SAI UNIVERSITY OF TECHNOLOGY, BURLA****Lesson plan****Semester: 7<sup>th</sup>****Subject: Process Simulation and Modelling**

Lecture	Module	Topic
1	1	Techniques of digital simulation
2	1	Information Flow
3	1	From Process to information flow diagram
4	1	From information flow diagram to numeric form
5	1	Recycles, Calculations of recycles
6	1	Digital simulation of CSTR in series
7	1	Non isothermal CSTR
8	1	Binary distillation column
9	1	Batch reactor
10	1	Computer aided design
11	1	Class Test, Discussions
12	2	Fundamentals of mathematical models and formulation
13	2	Continuity equation
14	2	Equation of motion
15	2	Transport equations
16	2	Energy equations
17	2	Equations of states
18	2	Equilibrium
19	2	Chemical kinetics and their applications
20	2	Lumped and distributed parameter models
21	2	Fluid systems
22	3	CSTR –single, -series, Isothermal
23	3	CSTR –constant hold up, variable hold up
24	3	CSTR –gas phase pressurized, non-isothermal
25	3	Single component vaporizer
26	3	Multi-component flash drum
27	3	Batch reactor, reactor with mass transfer
28	3	Ideal binary distillation column, Batch distillation
29	3	Heat exchanger
30	3	Class test, Discussions
31	4	Optimization : single variable
32	4	Analytical
33	4	Dichotomous search
34	4	Fibonacci
35	4	Golden section, regular-falsi
36	4	Multivariable : analytical, geometric programming

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37	4	Multivariable : linear programming
38	4	Convergence methods : Newton's method
39	4	Direct substitution
40	4	Wegstein's method

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Date:

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