VEER SURENDRA SAI UNIVRSITY OF TECNOLOGY, BURLA
Lesson plan

Semester: 5th
Subject: Process Dynamics and Control

Lecture	Module	Topic
1	1	Introduction to process dynamics and control, classification of variables in a chemical process
2	1	Hardware elements of a control system
3	1	Physical examples of first order systems
4	1	Dead Time
5	1	Linearization
6	1	Laplace Transforms
7	1	Response Of First Order Systems
8	1	Interacting And Non Interacting Systems
9	1	Second And Higher Order Systems
10	1	Dynamic Systems With Dead Time
11	1	Inverse Response
12	2	Feed Back Control
13	2	Closed Loop Transfer Functions
14	2	Types Of Feedback Controllers
15	2	Final Control Elements
16	2	Block Diagram Of Closed Loop System
17	2	Servo And Regulator Problems
18	2	Effect Of Proportional Control Action
19	2	Integral Control Action
20	2	Derivative Control Action
21	2	Effect Of PID Control Action
22	3	Stability Analysis Of Feedback Systems
23	3	Characteristic Equation
24	3	Routh-Hurwitz Criterion
25	3	Root Locus Analysis
26	3	Introduction To Frequency Response
27	3	Bode Diagrams
28	3	NyquistPlots
29	3	Bode Stability Criterion
30	3	NyquistStability Criterion
31	3	Gain And Phase Margins
32	4	Controller Tuning
33	4	Ziegler-Nichols Tunung Technique
34	4	Dead Time Compensation
35	4	Control Systems With Inverse Response
36	4	Cascade Control
37	4	Feed Forward Control
38	4	Ratio Control
39	4	Control Valves, Valve Sizing, Valve Characteristics
40	4	Process Identification

Signature of the Faculty Member: Counter Signature of H.O.D
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