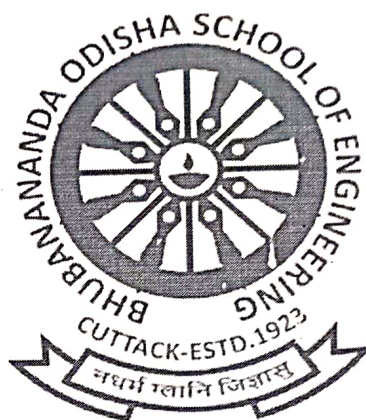


**BHUBANANANDA ORISSA SCHOOL OF ENGINEERING,
CUTTACK**

**LESSON PLAN (2023-24)
BY: ER. PRFULLA KUMAR PANDA**



**SUBJECT : PIC
SEMESTER : 5th
BRANCH : AE & I**

Bhubanananda Orissa School of Engineering

Lesson Plan

Discipline: AE&I	Semester: 5 th	Name of the Teaching Faculty: PRAFULLA KUMAR PANDA
Subject: PIC	No of Days/per week class allotted:4	Semester from 01/08/2023 to 30/11/2023 No of weeks:
Week No.	Class Day MON,TUE,THU, FRI	Theory Topics
1 st	1/08/2023	Introduction of the Subject and Syllabus discussion.
	3/08/2023	Chapter-1 Basic Concept of Control System:
	04/08/2023	1.1 Define of control system 1.2 Distinguish between open loop and closed loop system:
2 nd	7/08/2023	1.3 Explain stability of negative feedback in a close loop system.
	8/08/2023	1.4 Give some examples of an open loop and closed loop control system
	10/08/2023	1.5 Distinguish between manual Automatic controls systems
3 rd	11/08/2023	1.6 Explain the conversation from manual to Automatic operation.
	14/08/2023	1.7 Give introduction of cascaded feet forward and ratio type adaptive control system (only function no mathematically derivation).
	17/08/2023	1.8 Explain with examples for controlling temperature and pressure by close loop control system
4 th	18/08/2023	Chapter 1 Revision, Previous years questions discussion
	21/08/2023	Chapter-2. Process Control:
	22/08/2023	2.1 Intrcduction. 2.2 Principle of Process control
5 th	24/08/2023	2.3 Types of control system and its applications
	25/08/2023	2.4 Elements of process control system .
	28/08/2023	2.5 Properties of controller
6 th	29/08/2023	2.6 Classification of controller
	31/08/2023	2.7 Analog controller.
	01/09/2023	2.8 Pneumatic control'er
7 th	04/09/2023	2.9 Hydraulic controller.
	05/09/2023	2.10 Electrical and Electronic controller
	07/09/2023	2.11 Digital controller
	08/09/2023	Chapter 2 Revision, Previous year's questions discussion.
	11/09/2023	Chapter-3 Various Control Action:
	12/09/2023	3.1 Different type of control action. 3.2 Explain the principle of ON/OFF control action.

Bhubanananda Orissa School of Engineering

Lesson Plan

	14/09/2023	3.3 Explain the principle of proportional control action.
	15/09/2023	3.4 Explain the principle of integral control action
	18/09/2023	3.5 Explain the principle of Derivative control action.
	21/09/2023	3.6 Explain the principle of composite control action [P+I, P+D,P+I+D)
	22/09/2023	3.7 Explain floating control.
	25/09/2023	3.8 Comparison of various control action.
	26/09/2023	Chapter 3 Revision, Previous year's questions discussion.
	28/09/2023	Internal -I
	29/09/2023	Chapter-4 Controllers:
	03/10/2023	4.1 Definition of Controllers. 4.2 Classification of controller (Pneumatic, Hydraulic, Electrical and Electronic control system).
	05/10/2023	4.3 Flapper Nozzle system, Pneumatic Relay, Pneumatic ON/OFF.
	06/10/2023	4.4 Three mode (PID Pneumatic controller).
	09/10/2023	4.5 Hydraulic Control system with Examples.
	10/10/2023	4.6 Hydraulic proportional, integral and Derivative controller.
	12/10/2023	4.7 Advantages and Disadvantage of Pneumatic and Hydraulic control system.
	13/10/2023	4.8 Advantages and Disadvantages of Pneumatic and Hydraulic control system. 04.9 Electronic controller with example.
	16/10/2023	4.10 Realization of various control mode action using OP-AMP – ON/OFF ,Proportional ,integral, Two mode and three mode using OP-AMP.)
	17/10/2023	4.11 Gives some examples of Electronic controller. 4.12 Comparison of Pneumatic and Hydraulic and Electronic controller.
	19/10/2023	Chapter 4 Revision, Previous years questions discussion.
	20/10/2023	Chapter-5 Characteristics of Process Control: 5.1 Dynamic elements in control loop (negative feedback, Dead time capacitive characteristics of real process).
	30/10/2023	5.2 Analysis of self-operating proportional controller for Flow level.
	31/10/2023	5.3 Explain the idea about proportional Band Delay Dead in time).
	02/11/2023	5.4 Explain the idea about proportional band, Delay Dead in time process, Transfer function, Bandwidth and Gain, Offset error.
	03/11/2023	5.5 Explain the characteristics of pneumatic PID Controller the pressure control application.

Bhubanananda Orissa School of Engineering

Lesson Plan

	06/11/2023	Chapter 5 Revision, Previous years questions discussion
	07/11/2023	Chapter-6 concept of Digital control system: 6.1 Basic terminology of computer of computer based digital control system
	09/11/2023	6.2 Overview classical approach to digital controller design vs Analog computer. 6.3 Basic Digital control scheme.
	10/11/2023	.6.4 Models Digital control systems Z-domain description of sample continuous with dead time.
	13/11/2023	.6.5 Implementation of digital control.
	14/11/2023	6.6 Examples of digital Temperature and position control system
	16/11/2023	Chapter 6 Revision, Previous years questions discussion
	17/11/2023	Chapter-7 Advance control System: 7.1 Computer control of process & its need 7.2 PLC Definition-Relay based and PLC based control panel.
	20/11/2023	7.3 Programmable logic Controller (PLC). (i) Parts of PLC (II) Basic block diagram (iii) Principle of operation (IV) PLC size, specification, work station and application (v). Basics of PLC Programming & types of PLC programming
	21/11/2023	7.4 Instruction sets-Ladder diagram for AND, OR, NAND.NOR Relay schematics
	23/11/2023	7.5 Define supervisory control and data Acquisition system (SCADA).
	24/11/2023	7.6 Explain SCADA system with neat block diagram application.
	28/11/2023	7.7 Explain microcontroller or microcontroller application in control system.
	30/11/2023	7.8 Explain the concept of distributed control system and its advantage.
	30/11/2023	7.9 Define remote terminal unit (RTU) and Master terminal unit (MTU).
		Chapter 7 Revision, Previous years questions discussion.
		OVERALL PREVIOUS YEARS QUESTIONS DISCUSSION

prafulla kumar pande

Signature of Faculty

HOD, AE&I

Academic Coordinator

Principal