

BHUBANANANDA ORISSA SCHOOL OF ENGINEERING, CUTTACK

**DEPARTMENT OF APPLIED ELECTRONICS &
INSTRUMENTATION ENGG.**

**LESSON PLAN
OF
INDUSTRIAL CONTROL DEVICES & DATA ACQUISITION SYSTEM
(6th Semester, AE&I)**

**By
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Lecturer, AE&I**

Session: 2025-26 (SUMMER)

No of Period :75 (5L/week)

Subject Code: TH-2: INDUSTRIAL CONTROL DEVICES & DATA AQUISATION SYSTEM

Period	Week	Date	Topics to be covered
1	1	22.12.2025	UNIT-1:Power semiconductor diode & transistors: 1.1 Introduction to Power Electronics, Define Converter, Inverter, Chopper, Cylo Converter, AC Voltage Controller.
2		23.12.2025	1.1 Introduction to Power Electronics, Define Converter, Inverter, Chopper, Cylo Converter, AC Voltage Controller.
3		24.12.2025	1.1 Introduction to Power Electronics, Define Converter, Inverter, Chopper, Cylo Converter, AC Voltage Controller.
4		26.12.2025	1.2 Power diode.
5	2	29.12.2025	1.3 Power transistor.
6		30.12.2025	1.4 Power MOSFET.
7		31.12.2025	1.5 IGBT.
8	3	01.01.2026	1.5 IGBT.
9		02.01.2026	1.6 MOS Control, Thermistor & Their Comparison.
10	4	05.01.2026	1.6 MOS Control, Thermistor & Their Comparison.
11		06.01.2026	1.7 UJT.
12		07.01.2026	Revision of Unit-1
13		08.01.2026	UNIT-2: Thyristors & their characteristic: 2.1 SCR. (only construction & characteristics)
14	5	09.01.2026	2.2 TRIAC. (only construction & characteristics).
15		12.01.2026	2.3 GTO. (only construction & characteristics).
16		13.01.2026	2.4 SCS. (only construction & characteristics).
17		15.01.2026	2.5 PUT. (only construction & characteristics).
18		16.01.2026	2.6 SUS. (only construction & characteristics).
19	6	19.01.2026	2.7 Thyristor turn ON & turn OFF , gate characteristics.
20		20.01.2026	2.8 Triggering of thyristor through get current.
21		21.01.2026	2.9 Firing circuit for thyristor.
22		22.01.2026	2.10 Thyristor protection- Heating,Cooling,Mounting.
23	7	27.01.2026	2.11 Series & parallel operation.& Revision of unit-2
24		28.01.2026	CLASS TEST-1(UNIT-1&UNIT-2)
25		29.01.2026	UNIT-3: Application of an SCR : 3.1 Explain DC Motor using SCR (with variation in load and variation power supply).
26	8	30.01.2026	3.1 Explain DC Motor using SCR (with variation in load and variation power supply).
27		02.02.2026	3.2 Explain SCR drives only DC drive.
28		03.02.2026	3.3 Explain SCR working of an SCR illumination.
29		04.02.2026	3.4 Explain the function of SCS (SILICON CONTROLLED SWITCH).
30		05.02.2026	Rivision of Unit-3
31		06.02.2026	UNIT-4: SYNCHROS : 4.1 Define synchros System.

32	9	09.02.2026	4.2 Explain the operation synchros generator and Motor.
33		10.02.2026	4.3 Explain the Reversing Motor and stator connection.
34		11.02.2026	4.4 Explain the principle of differential synchros system
35		12.02.2026	4.5 Explain the differential synchros system for addition and subtraction.
36		13.02.2026	4.6 Explain some application of synchros system
37	10	16.02.2026	Rivision of Unit-4
38		17.02.2026	CLASS TEST-2(UNIT-3&UNIT-4)
39		18.02.2026	UNIT-5: Servo System : 5.1 Define servo Mechanism.
40		19.02.2026	5.2 List the elements Servo Mechanism and explain general block diagram of Servo system and different elements of servo system.
41		20.02.2026	5.3 Explain the DC and AC servo system.
42	11	23.02.2026	5.4 Explain working Principle of stepper Motor.
43		24.02.2026	5.5 Discuss some application servo mechanism and in control system.
44		25.02.2026	Rivision of Unit-5
45		26.02.2026	UNIT-6: AC voltage controllers: 6.1 Types of A.C. voltage controller.
46		27.02.2026	6.2 Integral cycle control.
47	12	02.03.2026	6.3 Single phase voltage controllers.
48		05.03.2026	6.4 Three phase voltage Controllers.
49		06.03.2026	6.4 Three phase voltage Controllers.
50	13	09.03.2026	Rivision of Unit-6
51		10.03.2026	UNIT-7: Cycloconverters: 7.1 Definition of Cycloconverter& its operation.
52		11.03.2026	7.2 Single phase Cycloconverters.
53		12.03.2026	7.3 Bridge type Cycloconverters.
54		13.03.2026	7.4 Three phase half wave Cycloconverter.
55	14	16.03.2026	7.5 Load commutated Cycloconverter.
56		17.03.2026	UNIT-8: AC and DC Motor Control : 8.1 Discuss the types speed control mechanism DC and AC motor.
57		18.03.2026	8.1 Discuss the types speed control mechanism DC and AC motor.
58		19.03.2026	8.2 Explain the function of an SCR speed control and DC Motor circuit..
59		20.03.2026	8.2 Explain the function of an SCR speed control and DC Motor circuit..
60	15	23.03.2026	8.3 Explain AC drives and Frequency converter.
61		24.03.2026	8.4 Microprocessor control of stepper motor.
62		25.03.2026	8.4 Microprocessor control of stepper motor.
63		26.03.2026	8.5 Stepper Motor control using I.C.
64	16	30.03.2026	8.6 Microprocessor and PLC based speed control of DC motor.
65		31.03.2026	8.6 Microprocessor and PLC based speed control of DC motor.
66	17	02.04.2026	Rivision of Unit-8
67	18	06.04.2026	CLASS TEST-2
68		07.04.2026	UNIT-9: Chopper & drives; 9.1 Basic concept of choppers.

69	19	08.04.2026	9.2 Control strategy of chopper.
70		09.04.2026	9.2 Control strategy of chopper.
71		10.04.2026	9.3 Stepper chopper.
72		13.04.2026	9.3 Stepper chopper.
73		15.04.2026	9.4 Basic concept of single chopper drives.
74		16.04.2026	Rivision of Unit-9
75		17.04.2026	<i>QUESTIONS PRACTICE (PYQ'S)</i>


Signature Of Faculty


Signature of HOD