

▪ SEMESTER:- V

▪ COURSE NO.:- FE-3510

▪ COURSE TITLE:- INSTRUMENTATION AND PROCESS CONTROL

▪ CREDITS:- 3(2+1)

➤ THEORY

NO. OF UNITS	TOPICS	NO. OF LECTURES
1	<i>Introduction, definition, recorders and monitors, panel boards</i>	3
2	<i>General characteristics of instruments, static and dynamic characteristics</i>	4
3	<i>Temperature and temp. scales, various types of thermometers - mercury-in-glass, bimetallic, pressure-spring thermometers, thermo couples, resistance thermometers and pyrometers</i>	5
4	<i>Pressure and pressure scales, manometers, pressure elements, differential pressure</i>	4
5	<i>Liquid level measurement, different methods of liquid level measurement</i>	4
6	<i>Flow measurement, kinds of flow, rate of flow, total flow, differential pressure meters, variable area meters</i>	4
7	<i>Transmission, pneumatic and electrical</i>	3
8	<i>Control elements, control actions, pneumatic and electrical control systems</i>	3
	TOTAL	30

➤ PRACTICALS

NO. OF UNITS	TOPICS	NO. OF EXPT.
1	<i>To study instrumentation symbols</i>	1
2	<i>Measurement of temperature by different thermometers.</i>	1
3	<i>Measurement of pressure by 'U' tube manometer, (inclined tube manometer)</i>	2

4	<i>Measurement of liquid level in the tank with the help of Bob and tape</i>	2
5	<i>Determination of relative humidity by wet and dry bulb thermometer</i>	2
6	<i>Measurement of velocity of fluid by using venturimeter/orifice meter/pilot tube</i>	2
7	<i>Measurement of RPM of an electric motor by Tachometer</i>	2
8	<i>Measurement of wind velocity by anemometer</i>	1
9	<i>Measurement of intensity of sun shine by sunshine recorders</i>	2
	TOTAL	15

➤ *Reference Books:*

- *Instrumentation* *F.W. Kirk and N.R. Rimboi.*
- *Industrial instrumentation fundamentals* *Austin E. Fjribance*
- *Process instruments and controls Handbook* *Considine*