UTKALMANI GOPABANDHU INSTITUTE OF ENGINEERING, ROURKELA

LESSON PLAN

SESSION: 2023-2024

DEPARTMENT OF ELECTRONICS AND TELECOMMUNICATION ENGINEERING

SUBJECT CODE: Th.4

NAME OF THE SUBJECT: ELECTRONICS MEASUREMENT & INSTRUMENTATION

BRANCH: ELECTRONICS & TELECOMMUNICATION

SEMESTER: DIPLOMA 3RD SEM

NUMBER OF CLASSES ALLOTED PER WEEK: 4

TOTAL PERIODS ALLOTED TO THE SUBJECT ACCORDING TO SCTEVT: 60

NAME OF THE FACULTY: PRIYADARSHINI MISHRA

LESSON PLAN

DEPARTMENT OF ELECTRONICS AND TELECOMMUNICATION ENGINEERING

SUBJECT CODE: **Th.4**

NAME: **ELCTRONICS MEASUREMENT & INSTRUMENTATION**

BRANCH: **ELECTRONICS & TELECOMMUNICATION**

SEMESTER: **DIPLOMA-III**

PERIODS PER WEEK: **4**

NAME OF THE FACULTY: **PRIYADARSHINI MISHRA**

NO OF CLASSES ALLOTTED PER WEEK OFF-LINE : 4 (01/08/2023-30/11/2023)

Week/Date	Lecture	Topic to be covered
1st week	1st	NA
	2nd	**CHAPTER-1** Introduction to Static & Dynamic characteristics of Instrument
	3rd	Accuracy, sensitivity, reproducibility & static error of Instruments
	4th	Dynamic characteristics (Fidelity, range, speed of response) Errors of an Instrument, Types of errors
2nd week	1st	**CHAPTER-2** Introduction to indicator & Display devices & its types Basic principle of meter movement
	2nd	Explanation of PMMC & its advantages & disadvantages
	3rd	Operation of MI instrument & its advantages & disadvantages
	4th	Operation of DC Ammeter & Multi range ammeter

LESSON PLAN

DEPARTMENT OF ELECTRONICS AND TELECOMMUNICATION ENGINEERING

SUBJECT CODE: **Th.4**

NAME: **ELCTRONICS MEASUREMENT & INSTRUMENTATION**

BRANCH: **ELECTRONICS & TELECOMMUNICATION**

SEMESTER: **DIPLOMA-III**

PERIODS PER WEEK: **4**

NAME OF THE FACULTY: **PRIYADARSHINI MISHRA**

NO OF CLASSES ALLOTTED PER WEEK OFF-LINE : 4 (01/08/2023-30/11/2023)

Week/Date	Lecture	Topic to be covered
3rd week	1st	Operation of DC & AC Voltmeter & its application
	2nd	Basic principle of Ohm Meter(Series, Shunt)
	3rd	Basic principle of Analog Multimeters, it's types & applications
	4th	Opearation of Q Meter & it's essential
4th week	1st	**CHAPTER-3** Operation of display of 3 ½ ,4 ½ Digital Multimeter& Resolution & Sensitivity
	2nd	Operation of Ramp type Digital Voltmeter & applications
	3rd	Working principle of Digital Multimeters types & application
	4th	Working principle of Digital frequency meter

LESSON PLAN

DEPARTMENT OF ELECTRONICS AND TELECOMMUNICATION ENGINEERING

SUBJECT CODE: **Th.4**

NAME: **ELCTRONICS MEASUREMENT & INSTRUMENTATION**

BRANCH: **ELECTRONICS & TELECOMMUNICATION**

SEMESTER: **DIPLOMA-III**

PERIODS PER WEEK: **4**

NAME OF THE FACULTY: **PRIYADARSHINI MISHRA**

NO OF CLASSES ALLOTTED PER WEEK OFF-LINE : 4 (01/08/2023-30/11/2023)

Week/Date	Lecture	Topic to be covered
5th week	1st	Working of Digital measurement of Time, Measurement of frequency
	2nd	Working of Digital Tachometer
	3rd	Working of Automation in Digital Instruments
	4th	Block diagram of LCR meters & working
6th week	1st	**CHAPTER-4** Basic principle of Oscilloscope & its block diagram
	2nd	Block diagram of CRO, Dual trace oscilloscope
	3rd	CRO Measurements, Lissajous figures
	4th	Applications of Oscilloscope(Voltage period & frequency measurement)

LESSON PLAN

DEPARTMENT OF ELECTRONICS AND TELECOMMUNICATION ENGINEERING

SUBJECT CODE: **Th.4**

NAME: **ELCTRONICS MEASUREMENT & INSTRUMENTATION**

BRANCH: **ELECTRONICS & TELECOMMUNICATION**

SEMESTER: **DIPLOMA-III**

PERIODS PER WEEK: **4**

NAME OF THE FACULTY: **PRIYADARSHINI MISHRA**

NO OF CLASSES ALLOTTED PER WEEK OFF-LINE : 4 (01/08/2023-30/11/2023)

Week/Date	Lecture	Topic to be covered
7th week	1st	Operation of Digital Storage Oscilloscope
	2nd	Operation of High frequency Oscilloscope
	3rd	**CHAPTER-5** Introduction to AC & DC Bridge
	4th	Whetstone's Bridge
8th week	1st	Maxwell's Bridge for unknown inductance measurement
	2nd	Hay's Bridge for unknown inductance measurement
	3rd	Schering's Bridge for unknown capacitance measurement
	4th	Desauty's Bridge for unknown capacitance measurement

LESSON PLAN

DEPARTMENT OF ELECTRONICS AND TELECOMMUNICATION ENGINEERING

SUBJECT CODE: **Th.4**

NAME: **ELCTRONICS MEASUREMENT & INSTRUMENTATION**

BRANCH: **ELECTRONICS & TELECOMMUNICATION**

SEMESTER: **DIPLOMA-III**

PERIODS PER WEEK: **4**

NAME OF THE FACULTY: **PRIYADARSHINI MISHRA**

NO OF CLASSES ALLOTTED PER WEEK OFF-LINE : 4 (01/08/2023-30/11/2023)

Week/Date	Lecture	Topic to be covered
9th week	1st	Working principle of Q meter & measurement of low impedance
	2nd	LCR meter & it's measurement
	3rd	**CHAPTER-6** Introduction to Transducer, method of selecting & advantage of electrical transducer
	4th	Method of selecting mechanical transducer
10th week	1st	Definition & working of Strain Gauge
	2nd	Working of LVDT
	3rd	Working of Capacitive transducer
	4th	Working of Load Cell

LESSON PLAN

DEPARTMENT OF ELECTRONICS AND TELECOMMUNICATION ENGINEERING

SUBJECT CODE: **Th.4**

NAME: **ELCTRONICS MEASUREMENT & INSTRUMENTATION**

BRANCH: **ELECTRONICS & TELECOMMUNICATION**

SEMESTER: **DIPLOMA-III**

PERIODS PER WEEK: **4**

NAME OF THE FACULTY: **PRIYADARSHINI MISHRA**

NO OF CLASSES ALLOTTED PER WEEK OFF-LINE : 4 (01/08/2023-30/11/2023)

Week/Date	Lecture	Topic to be covered
11th week	1st	Working of RTD
	2nd	Working of Optical pyrometer
	3rd	Working of Optical pyrometer
	4th	Working of Optical pyrometer
12th week	1st	Working of Thermocouple
	2nd	Working of Thermocouple
	3rd	Working o Thermister
	4th	Working Of Current Transducer

LESSON PLAN

DEPARTMENT OF ELECTRONICS AND TELECOMMUNICATION ENGINEERING

SUBJECT CODE: **Th.4**

NAME: **ELCTRONICS MEASUREMENT & INSTRUMENTATION**

BRANCH: **ELECTRONICS & TELECOMMUNICATION**

SEMESTER: **DIPLOMA-III**

PERIODS PER WEEK: **4**

NAME OF THE FACULTY: **PRIYADARSHINI MISHRA**

NO OF CLASSES ALLOTTED PER WEEK OFF-LINE : 4 (01/08/2023-30/11/2023)

Week/Date	Lecture	Topic to be covered
13th week	1st	Working Of KW Transducer
	2nd	Working of Proximity & light sensors
	3rd	**CHAPTER-7** General aspects & classification of signal generators
	4th	Working principle of AF Sine wave generator
14th week	1st	Working principle of AF Sine wave generator
	2nd	Working principle of AF Sine wave generator
	3rd	Working principle of AF Sine wave generator
	4th	Working principle of Square wave generator

LESSON PLAN

DEPARTMENT OF ELECTRONICS AND TELECOMMUNICATION ENGINEERING

SUBJECT CODE: **Th.4**

NAME: **ELCTRONICS MEASUREMENT & INSTRUMENTATION**

BRANCH: **ELECTRONICS & TELECOMMUNICATION**

SEMESTER: **DIPLOMA-III**

PERIODS PER WEEK: **4**

NAME OF THE FACULTY: **PRIYADARSHINI MISHRA**

NO OF CLASSES ALLOTTED PER WEEK OFF-LINE : 4 (01/08/2023-30/11/2023)

Week/Date	Lecture	Topic to be covered
15th week	1st	Working principle of Square wave generator
	2nd	Working of Function generator
	3rd	Working of Function generator
	4th	Function of basic wave analyser
16th week	1st	Function of basic wave analyser
	2nd	Working of Spectrum analyser
	3rd	Working of Spectrum analyser
	4th	Working of Spectrum analyser

LESSON PLAN

DEPARTMENT OF ELECTRONICS AND TELECOMMUNICATION ENGINEERING

SUBJECT CODE: **Th.4**

NAME: **ELCTRONICS MEASUREMENT & INSTRUMENTATION**

BRANCH: **ELECTRONICS & TELECOMMUNICATION**

SEMESTER: **DIPLOMA-III**

PERIODS PER WEEK: **4**

NAME OF THE FACULTY: **PRIYADARSHINI MISHRA**

NO OF CLASSES ALLOTTED PER WEEK OFF-LINE : 4 (01/08/2023-30/11/2023)

Week/Date	Lecture	Topic to be covered
17th week	1st	Revision CH-1 & 2
	2nd	Revision CH-3 & 4
	3rd	Revision CH-5
	4th	Revision CH- 6
18th week	1st	Revision CH-7
	2nd	Semester questions discussion
	3rd	NA
	4th	NA