## **ACADEMIC LESSON PLAN OF WINTER 2022**

Discipli		
Discipline: ELECTRICAL	Semester: 3 <sup>rd</sup> Sem (Sec A)	Name of the Teaching Faculty: Sandeep Mohapatra
Subject:	No. of	C
Electrical	days/per	Semester From: 15 <sup>th</sup> SEP 2022 to 22 <sup>nd</sup> DEC 2022 No. of Weeks: 15 weeks
Engineering	week class	No. of weeks: 15 weeks
Material	allotted:	
	4p/week	
	1st	Unit-1: CONDUCTING MATERIALS
	_	1.1 Introduction, Resistivity, factors affecting resistivity, Classification of conducting materials
		into low-resistivity and high resistivity materials.
<b>1</b> st		
-	2 <sup>nd</sup>	1.2Low Resistivity Materials and their Applications. (Copper, Silver, Gold, Aluminium, Steel)
	<b>3</b> rd	1.3 Stranded Conductors
	<b>4</b> th	1.4 Bundle Conductors
	1st	1.5Low resistivity copper alloys
2 <sup>nd</sup>	<b>2</b> <sup>nd</sup>	1.6 High Resistivity Materials and their Applications(Tungsten, Carbon, Platinum, Mercury)
	3 <sup>rd</sup>	1.7Super conductivity, Superconducting Materials
	<b>4</b> <sup>th</sup>	1.8 Application of Super Conductor materials
	<b>1</b> st	UNIT-2:SEMICONDUCTING MATERIALS
		2.1 Introduction, Semiconductors
314	<b>2</b> <sup>nd</sup>	2.2 Electron Energy and Energy band theory
	3rd	2.3 Excitation of atoms
	~ <b>4</b> <sup>th</sup>	2.4 Insulators, semiconductors and conductors
	1st	2.4 Insulators, semiconductors and conductors
4 <sup>th</sup>	1 2nd	2.5 Semiconductor Materials
-	3 <sup>rd</sup>	2.6Co-valent bonds
	1 <sup>st</sup>	2.7 Intrinsic semiconductors, Extrinsic semiconductors  2.8 N-Type materials, P-Type materials
-	2 <sup>nd</sup>	2.9 Minority and Majority carriers
5 <sup>th</sup>	3rd	2.10 Semiconductor materials, Application of semiconductor materials
-	4 <sup>th</sup>	Application of Semiconducting materials
	1 <sup>st</sup>	UNIT-3:INSULATING MATERIALS
	-	3.1Introduction, General properties of insulating materials(contd.)
6 <sup>th</sup>	2 <sup>nd</sup>	3.2 General properties of insulating materials
	3rd	3.3 Insulting materials –classification, properties and application
	<b>4</b> <sup>th</sup>	3.3 introduction, Classification of insulating materials based on physical and chemical properties
	1st	3.3 Classification of insulating materials based on physical and chemical properties
<u></u>	2nd	3.4 Insulating Gases
<b>7</b> <sup>th</sup>		3.4 Commonly used insulating gases
´	4 <sup>th</sup>	UNIT-4: DIELECTRIC MATERIAL
	•	4.1 Introduction
	1st	4.2Dielectric constant of permittivity
	2 <sup>nd</sup>	4.3 Polarization
8 <sup>th</sup>	3 <sup>rd</sup>	4.3 Polarization
	4 <sup>th</sup>	4.4 Dielectric loss
	1 <sup>st</sup>	4.5Electric Conductivity of Dielectrics and their breakdown
911	<b>2</b> nd	4.5 Electric Conductivity of Dielectrics and their breakdown
	3 <sup>rd</sup>	4.6properties of Dielectrics
	4 <sup>th</sup>	4.7 Application of Dielectrics
10 <sup>th</sup>	1st	UNIT-5:MAGNETIC MATERIALS
		5.1 Introduction
	2 <sup>nd</sup>	5.2 Classification
	<b>2</b> rd	5.2 Diamagnetism

11 <sup>th</sup>	1"	5.2 Ferromagnetism
	2nd	5.3 Magnetization Curve
	314	5.4Hysteresis
	411	5.4 Hysteresis(contd.)
	1"	5.5 Eddy currents
12th	2 <sup>nd</sup>	5.6 Curie point, Magneto-striction
	314	5.7 Soft magnetic materials
	411	5.7 Soft magnetic materials
	1 ''	5.8 Hard magnetic materials
	2nd	5.8 Hard magnetic materials
13 <sup>th</sup>	314	UNIT-6:MATERIALS FOR SPECIAL PURPOSES
		6.1Introduction
	4th	6.2 structural materials
	1st	6.3 protective materials: lead
14 <sup>th</sup>	2 <sup>nd</sup>	6.3 steel tapes
- '	314	6.3 wires and strips
	4 <sup>th</sup>	6.4 Other Materials: Thermocouple materials
	<b>1</b> st	6.4 Bimetals
15 <sup>th</sup>	2 <sup>nd</sup>	6.4soldering materials
20	3rd	6.4 Fuse and fuse materials
	4th	6.4 Dehydrating materials

Signature of Teaching Faculty

## **ACADEMIC LESSON PLAN OF WINTER 2022**

Discipline:	Semester	Name of the State
ELECTRICAL	3rd Sem	Name of the Teaching Faculty: Sandeep Mohapatra
TOTRICAL		
Subject:	(Sec B)	
Electrical	No. of	Semester From: 15th SEP 2022 to 22nd DEC 2022
Engineering	days/per	No. of Weeks: 15 weeks
Material	week class	
iviaterial	allotted:	
	4p/week	
	1 **	Unit-1: CONDUCTING MATERIALS
		1.1 Introduction, Resistivity, factors affecting resistivity, Classification of conducting materials
1st		into low-resistivity and high resistivity materials.
	2 <sup>nd</sup>	1.2Low Resistivity Materials and their Applications. (Copper, Silver, Gold, Aluminium, Steel)
	3 <sup>rd</sup>	1.3 Stranded Conductors
	4 <sup>th</sup>	1.4 Bundle Conductors
-	1 '1	1.5Low resistivity copper alloys
2 <sup>nd</sup>	2 <sup>nd</sup>	1.6 High Resistivity Materials and their Applications(Tungsten, Carbon, Platinum, Mercury)
	3 <sup>rd</sup>	1.7Super conductivity, Superconducting Materials
	4th	1.8 Application of Super Conductor materials
	1 <sup>st</sup>	UNIT-2:SEMICONDUCTING MATERIALS
		2.1 Introduction, Semiconductors
3 <sup>rd</sup>	2 <sup>nd</sup>	2.2 Electron Energy and Energy band theory
	3 <sup>rd</sup>	2.3 Excitation of atoms
	4 <sup>th</sup>	2.4 Insulators, semiconductors and conductors
	1 <sup>st</sup>	2.4 Insulators, semiconductors and conductors
4**	2 <sup>nd</sup>	2.5 Semiconductor Materials
_	3 <sup>rd</sup>	2.6Co-valent bonds
	4 <sup>th</sup>	2.7 Intrinsic semiconductors, Extrinsic semiconductors
	<b>1</b> <sup>st</sup>	2.8 N-Type materials, P-Type materials
5 <sup>th</sup>	2 <sup>nd</sup>	2.9 Minority and Majority carriers
	3 <sup>rd</sup>	2.10 Semiconductor materials, Application of semiconductor materials
	4 <sup>th</sup>	Application of Semiconducting materials
	1 <sup>st</sup>	UNIT-3:INSULATING MATERIALS
		3.1Introduction, General properties of insulating materials(contd.)
6 <sup>th</sup>	2 <sup>nd</sup>	3.2 General properties of insulating materials
	3rd	3.3 Insulting materials –classification, properties and application
	4 <sup>th</sup>	3.3 introduction, Classification of insulating materials based on physical and chemical propertie
	1st	3.3 Classification of insulating materials based on physical and chemical properties
	<b>2</b> nd	3.4 Insulating Gases
<b>7</b> <sup>th</sup>	3'd	3.4 Commonly used insulating gases
,	<b>4</b> <sup>th</sup>	UNIT-4: DIELECTRIC MATERIAL
	7	4.1 Introduction
	1 <sup>st</sup>	4.2Dielectric constant of permittivity
	2 <sup>nd</sup>	4.3 Polarization
8 <sup>th</sup>	3'd	4.3 Polarization
	4 <sup>th</sup>	4.4 Dielectric loss
	1"	
-	2 <sup>nd</sup>	4.5 Electric Conductivity of Dielectrics and their breakdown
9 <sup>th</sup>	310	4.5 Electric Conductivity of Dielectrics and their breakdown
-		4.6properties of Dielectrics
		4.7 Application of Dielectrics
	1"	UNIT-5:MAGNETIC MATERIALS
10 <sup>th</sup>	2 <sup>nd</sup>	5.1 Introduction 5.2 Classification

11 <sup>th</sup>	<b>1</b> st	5.2 Ferromagnetism
	2 <sup>nd</sup>	5.3 Magnetization Curve
	3 <sup>rd</sup>	5.4Hysteresis
	4 <sup>th</sup>	5.4 Hysteresis(contd.)
	1 <sup>st</sup>	5.5 Eddy currents
12 <sup>th</sup>	2 <sup>nd</sup>	5.6 Curie point, Magneto-striction
12	3rd	5.7 Soft magnetic materials
	<b>4</b> <sup>th</sup>	5.7 Soft magnetic materials
	<b>1</b> st	5.8 Hard magnetic materials
	2 <sup>nd</sup>	5.8 Hard magnetic materials
13 <sup>th</sup>	3 <sup>rd</sup>	UNIT-6:MATERIALS FOR SPECIAL PURPOSES
		6.1Introduction
	4 <sup>th</sup>	6.2 structural materials
	<b>1</b> st	6.3 protective materials: lead
1.4.6	2 <sup>nd</sup>	6.3 steel tapes
<b>14</b> <sup>th</sup>	3 <sup>rd</sup>	6.3 wires and strips
	4 <sup>th</sup>	6.4 Other Materials: Thermocouple materials
	<b>1</b> st	6.4 Bimetals
1 F + b	2 <sup>nd</sup>	6.4soldering materials
15 <sup>th</sup>	3 <sup>rd</sup>	6.4 Fuse and fuse materials
	4 <sup>th</sup>	6.4 Dehydrating materials

Signature of Teaching Faculty