

# LESSON PLAN

**DEPARTMENT OF ELECTRICAL ENGINEERING, ITT, CHOUDWAR**

**SUBJECT: TMEM**

**Periods: 5 per week**

**SEMESTER: 6<sup>TH</sup>**

**NAME OF FACULTY: MONALISA SWAIN**

**No. of weeks: 15**

Week	Class Day	Theory / Practical Topics
1st	1 <sup>st</sup>	Inspection of arrival of machine and inspection procedure before its installation
	2 <sup>nd</sup>	Inspection of arrival of machine and inspection procedure before its installation
	3 <sup>rd</sup>	Civil construction feature regarding connection like ventilation, noise level, space for free movement.
	4 <sup>th</sup>	Civil construction feature regarding connection like ventilation, noise level, space for free movement.
	5 <sup>th</sup>	Tutorial
2 <sup>nd</sup>	1 <sup>st</sup>	Foundation and drainage of oil
	2 <sup>nd</sup>	Cabling and cable box for transformer
	3 <sup>rd</sup>	Provision for fire protection
	4 <sup>th</sup>	Provision for fire protection
	5 <sup>th</sup>	Tutorial
3 <sup>rd</sup>	1 <sup>st</sup>	Provision for bushing support location of switchgear
	2 <sup>nd</sup>	Steps for commissioning fitting of all accessories
	3 <sup>rd</sup>	Filling of oil, drying out
	4 <sup>th</sup>	Charging the breather with fresh silica gel
	5 <sup>th</sup>	Tutorial
4 <sup>th</sup>	1 <sup>st</sup>	Charging the breather with fresh silica gel
	2 <sup>nd</sup>	Cleaning of bushing, fixing of conductor
	3 <sup>rd</sup>	Fixing of protection circuits and setting of relays.
	4 <sup>th</sup>	Design and planning of indoor substation.
	5 <sup>th</sup>	Tutorial
5 <sup>th</sup>	1 <sup>st</sup>	General requirement of layout of indoor substation with key diagram
	2 <sup>nd</sup>	Consideration of safe operation of substation
	3 <sup>rd</sup>	Selection of site, transport & receipt of transformer, checking of insulation resistance of the winding, testing of transformer oil, protection fittings, construction of mounting, earthing arrangement and final commissioning
	4 <sup>th</sup>	Testing and commissioning of substation
	5 <sup>th</sup>	Tutorial
6 <sup>th</sup>	1 <sup>st</sup>	Installation of control and relay panels.
	2 <sup>nd</sup>	Preliminary preparation
	3 <sup>rd</sup>	. Sequence card for erection of switch gear equipments
	4 <sup>th</sup>	Location of place
	5 <sup>th</sup>	Tutorial
7 <sup>th</sup>	1 <sup>st</sup>	Unpacking
	2 <sup>nd</sup>	Foundation
	3 <sup>rd</sup>	Erection

	4 <sup>th</sup>	Relays
	5 <sup>th</sup>	Tutorial
8 <sup>th</sup>	1 <sup>st</sup>	Bus-bar earthing connection, Earthing
	2 <sup>nd</sup>	Connection to main cable
	3 <sup>rd</sup>	Connection to main cable
	4 <sup>th</sup>	Safety precaution
	5 <sup>th</sup>	Tutorial
9 <sup>th</sup>	1 <sup>st</sup>	Installation of outdoor circuit breaker
	2 <sup>nd</sup>	Receipt and storage
	3 <sup>rd</sup>	Civil works
	4 <sup>th</sup>	Various steps for installation
	5 <sup>th</sup>	Tutorial
10 <sup>th</sup>	1 <sup>st</sup>	Pre-commissioning tests
	2 <sup>nd</sup>	Fundamental of maintenance
	3 <sup>rd</sup>	Preventive maintenance and planning
	4 <sup>th</sup>	Preventive maintenance and planning
	5 <sup>th</sup>	Tutorial
11 <sup>th</sup>	1 <sup>st</sup>	Advantages of Preventive maintenance
	2 <sup>nd</sup>	Breakdown maintenance
	3 <sup>rd</sup>	List of tools / instruments and materials used for maintenance
	4 <sup>th</sup>	List of tools / instruments and materials used for maintenance
	5 <sup>th</sup>	Tutorial
12 <sup>th</sup>	1 <sup>st</sup>	Making or Preparing Maintenance schedule of DC machines
	2 <sup>nd</sup>	Making or Preparing Maintenance schedule of Induction machines,
	3 <sup>rd</sup>	Making or Preparing Maintenance schedule of Transformer,
	4 <sup>th</sup>	Making or Preparing Maintenance schedule of Transmission line,
13 <sup>th</sup>	1 <sup>st</sup>	Making or Preparing Maintenance schedule of Distribution lines,
	2 <sup>nd</sup>	Making or Preparing Maintenance schedule of Underground cables,
	3 <sup>rd</sup>	Making or Preparing Maintenance schedule of Circuit breakers
	4 <sup>th</sup>	Making or Preparing Maintenance schedule Of Switch gear and protective relays
	5 <sup>th</sup>	Tutorial
14 <sup>th</sup>	1 <sup>st</sup>	Making or Preparing Maintenance schedule of DC substations,
	2 <sup>nd</sup>	Making or Preparing Maintenance schedule of SF-6 circuit breakers,
	3 <sup>rd</sup>	Making or Preparing Maintenance schedule of , Batteries in substation
	4 <sup>th</sup>	Revision
	5 <sup>th</sup>	Tutorial
15 <sup>th</sup>	1 <sup>st</sup>	Revision
	2 <sup>nd</sup>	Revision
	3 <sup>rd</sup>	Revision
	4 <sup>th</sup>	Revision
	5 <sup>th</sup>	Tutorial