LESSON PLAN

SUB:-ANALOG ELECTRONICS & OP-AMP

BRANCH:- ELECTRICAL ENGG.

SEMESTER:4TH

NAME OF FACULTY: - TAPAN KUMAR DAS

GOVERNMENT POLYTECHNIC, BHADRAK

Sl. No.	Topic	Expected Date of Completion	Actual Date of Completion	Teaching Learning Process
CHAPTER-01(P-N JUNCTION DIODE)				

1	P-N Junction Diode			white board & marker
2	Working of Diode 3 V-I characteristic of PN junction Diode. .			white board & marker
3	DC load line Important terms such as Ideal Diode, Knee voltage			Video Lecture & Smart board
4	Zener breakdown . Avalanche breakdown			Video Lecture & Smart board
5	P-N Diode clipping Circuit.			white board & marker
6	P-N Diode clamping Circuit			white board & marker
CHAPTER-02(SPECIAL SEMICONDUCTOR DEVICES)				
1	Thermistors			Video Lecture & Smart board
2	Sensors & barretters			White board & marker
3	Zener Diode			Video Lecture & Smart board
4	Tunnel Diode			white board & marker
5	PIN Diode			white board & marker
LMS	**HOME WORK**			**LectureNotes**
CHAPTER-03(RECTIFIER CIRCUITS & FILTERS)				

1	Classification of rectifiers Analysis of half wave,			Video Lecture & Smart board
2	Full wave centre tapped rectifiers			Video Lecture & Smart board
3	Full wave Bridge rectifiers and calculate: DC output current and voltage RMS output current and voltage			Video Lecture & Smart board
4	Rectifier efficiency Ripple factor Regulation			Video Lecture & Smart board
5	Transformer utilization factor Peak inverse			white board & marker
6	Fillters introduction Shunt capacitor filter			white board & marker
7	Choke input filter π filter			Video Lecture & Smart board
CHAPTER-04 (TRANSISTORS)				
1	Principle of Bipolar junction transistor Different modes of operation of transistor			white board & marker
2	Current components in a transistor			Video Lecture & Smart board

3	Transistor as an amplifier .			Video Lecture & Smart board
4	Transistor circuit configuration & its characteristics			Video Lecture & Smart board
5	CB Configuration			Video Lecture & Smart board
6	CE Configuration			Video Lecture & Smart board
7	CC Configuration			Video Lecture & Smart board
LMS	**ASSIGNEMENT-1**			**LectureNotes**
CHAPTER-05 (TRANSISTOR CIRCUITS:				
1	Transistor biasing			white board & marker
2	Stabilization			Video Lecture & Smart board
3	Stability factor			Video Lecture & Smart board

4	Different method of Transistors Biasing			Video Lecture & Smart board
5	Base resistor method			white board & marker
6	Collector to base bias			white board & marker
7	Self bias or voltage divider method			white board & marker
HOME WORK				
7	Differential relay Current differential relay			white board & marker
8	Voltage balance differential relay. Types of protection			white board & marker
HOME WORK				
CHAPTER-06:TRANSISTOR AMPLIFIERS & OSCILLATORS				
1	Practical circuit of transistor amplifier DC load line and DC equivalent circuit			Video Lecture & Smart board
2	AC load line and AC equivalent circuit Calculation of gain Phase reversal			white board & marker
3	H-parameters of transistors			Video Lecture &

	Simplified H-parameters of transistor			Smart board
4	Generalised approximate model Analysis of CB, CE, CC amplifier using generalised approximate model.			Video Lecture & Smart board
5	Multi stage transistor amplifier			Video Lecture & Smart board
6	R.C. coupled amplifier Transformer coupled amplifier			white board & marker
7	Feed back in amplifier General theory of feed back Negative feedback circuit			
8	Advantage of negative feed back Power amplifier and its classification			Video Lecture & Smart board
9	Difference between voltage amplifier and power amplifier			Video Lecture & Smart board
10	Transformer coupled class A power amplifier Class A push – pull amplifier			Video Lecture & Smart board
11	Class B push – pull amplifier Oscillators Types of oscillators			Video Lecture & Smart board
12	Essentials of transistor oscillator Principle of operation of tuned collector, Hartley			Video Lecture & Smart board
13	Hartley, colpitt, phase shift, wein-bridge oscillator (no mathematical derivations)			

	HOME WORK			
CHAPTER-07(FIELD EFFECT TRANSISTOR) 8. **OPERATIONAL AMPLIFIERS:**				
1.	Classification of FET Advantages of FET over BJT			white board & marker
2.	Principle of operation of BJT			Video Lecture & Smart board
3.	FET parameters (no mathematical derivation)			Video Lecture & Smart board
4.	DC drain resistance			Video Lecture & Smart board
5.	AC drain resistance			white board & marker
6.	Trans-conductance Biasing of FET			white board & marker
	ASSIGNEMENT-2			
CHAPTER-08( ) **OPERATIONAL AMPLIFIERS:**				
1.	General circuit simple of OP-AMP and IC – CA – 741 OP AMP			white board & marker

2.	Operational amplifier stages Equivalent circuit of operational amplifier			white board & marker
3.	Open loop OP-AMP configuration OPAMP with fed back			white board & marker
4.	Inverting OP-AMP Non inverting OP-AMP			Video Lecture & Smart board
5.	Voltage follower & buffer			Video Lecture & Smart board
6.	Differential amplifier Adder or summing amplifier			Video Lecture & Smart board
7.	Sub tractor Integrator			Smart board
8.	Differentiator			white board & marker
9.	Comparator			white board & marker
	REVISION			white board & marker
	Total No of Hrs Required For The Course: 60			