	GOVERNMENT POLYTECHNIC, PURI	
	DEPARTMENT OF ELECTRICAL ENGINEERING	
Discipline: **ELECTRICAL ENGG**	Semester:4TH	Name of the Teaching Faculty: **MR AUROBINDO GHOSE, LECTURER IN ELECTRICAL ENGG.**
Subject: **Simulation Practice on MATLAB**	No. of days/per week class allotted: **03**	Semester From date:10.03.2022 To Date:01.07.2022 No. of weeks:15
PRE- REQUISITE	Basic knowledge of computer application. Knowledge of Engneering Mathematics,electronics circuits,network analysis.	
COURSE OUTCOMES	**CO1.**Develop an understanding of the main features and importance of MATLAB programming environment and simulation. **CO2.**Learn programming in MATLAB to perform mathematical manipulations and plotting of the same. **CO3.**Perform electrical and electronics simulation using Electrical sources, elements and power electronics devices. **CO4.**Verify the different Network Theorems using MATLAB simulation. **CO5.**Design Uncontrolled & Controlled Rectifiers & DC-DC Converters on MATLAB-Simulink environment for correctness.	

Week	Class Day	Theory / Practical Topics	DELIVERY METHOD
1st	1st	1.Introduction to MATLAB programming: 1.1. Functions and operation using variables and arrays.	Computer LAB
2nd	1st	1.1.1. To learn algebraic, trigonometric and exponential manipulation. 1.1.2. To learn Arithmetic, Relational and Logic operator.	Computer LAB
3rd	1st	1.2. Matrix formation and its manipulation.	Computer LAB
4th	1st	1.3. Vector manipulation: 1.3.1. Use of linspace to create vectors.	Computer LAB
5th	1st	1.3.2. To create, add and multiply vectors. 1.3.3. Use of sin and sqrt functions with vector arguments.	Computer LAB
6th	1st	1.4. Plotting: 1.4.1. Two dimensional Plots and sub plots 1.4.2. Label the plot and printing.	Computer LAB
7th	1st	1.5. Write and execute a file to plot a circle, impulse, step, ramp, sine and cosine functions.	Computer LAB
8th	1st	2.Introduction to SIMULINK: 2.1. Use of Commonly used blocks, Math operation block and Display block from SIMULINK library.	Computer LAB
9th	1st	2.Introduction to SIMULINK: 2.1. Use of Commonly used blocks, Math operation block and Display block from SIMULINK library.	Computer LAB
10th	1st	2.2. Use of logical and relational operator block.	Computer LAB

11th	1st	2.3. Use of Sim-Power system block to use Electrical sources, elements and Power electronics devices.	Computer LAB
12th	1st	2.4. SIMULATION: 2.4.1. Verification of Network theorems.	Computer LAB
13th	1st	2.4.2. Simulation of a half wave uncontrolled rectifier.	Computer LAB
14th	1st	2.4.3. Simulation of 1-phase full bridge controlled rectifier.	Computer LAB
15th	1st	2.4.4. Simulation of step-down chopper.	Computer LAB

Sign. of Faculty concerned

10/5/22

17/5/22

Principal
G.P Puri

17/5/22

Sign. of HOD i/c