



DEPARTMENT OF ELECTRICAL AND ELECTRONICS  
ENGINEERING

COURSE PLAN – PART I			
Name of the programme and specialization	III Year B.Tech, EEE		
Course Title	POWER SYSTEMS LABORATORY		
Course Code	EELR17	No. of Credits	02
Course Code of Pre-requisite subject(s)	EEPC18		
Session	January 2022	Section (if, applicable)	A
Name of Faculty	Dr. Aneesa Farhan M A	Department	EEE
Email	<a href="mailto:aneesa@nitt.edu">aneesa@nitt.edu</a> aneesafma@gmail.com	Telephone No.	7598164452 8015877137
Name of Course Coordinator(s) (if, applicable)	N A		
Course Type (please tick appropriately)	<input type="checkbox"/> Essential Laboratory Requirement (ELR)		
<b>Syllabus (approved in BoS)</b>			
<p><b>List of Experiments</b></p> <ul style="list-style-type: none"> <li>Real and Reactive Power Computation</li> <li>Transmission Line Parameter Calculation</li> <li>Bus Admittance Matrix Formulation</li> <li>Load Flow Analysis</li> <li>Z-bus Formation</li> <li>Symmetrical Fault Analysis</li> <li>Unsymmetrical Fault Analysis</li> </ul> <p>Mini-Project</p>			
<b>COURSE OBJECTIVES</b>			
To enhance the analyzing and problem-solving skills of the students in the area of power system and power electronics through computer programming and simulation.			



MAPPING OF COs with Pos	
Course Outcomes	Programme Outcomes (PO) (Enter Numbers only)
Upon completion of the course, the students will be able to	
1. Develop computer programs for power system studies.	1,2,5,6,8
2. Design, simulate and analyze power electronics circuits using simulation package	1,2,5,6,8,13
3. Prepare laboratory reports that clearly communicate experimental information in a logical and scientific manner	8,11,13

COURSE PLAN – PART II			
COURSE OVERVIEW			
<p>This course deals with development of computer programs for power system studies and performing power system studies employing simulation packages. Students gain experience in implementing the mathematical concepts and numerical algorithms that they learn in Power Systems Analysis course through computer programs. Further, they will be introduced to anyone of the power system packages such as Power World Simulator.</p>			
COURSE TEACHING AND LEARNING ACTIVITIES			
S.No.	Week/Contact Hours	Topic	Mode of Delivery
1	Week 1	Course plan discussion & Basic MATLAB programming	Online lecture
2	Week 2	Real and Reactive Power Computation (single phase system)	Simulation/Analysis
3	Week 3	Real and Reactive Power Computation (three phase system)	Simulation/Analysis
4	Week 4	Transmission Line Parameter Calculation	Simulation/Analysis
5	Week 5	Bus Admittance Matrix formulation	Simulation/Analysis



# NATIONAL INSTITUTE OF TECHNOLOGY, TIRUCHIRAPPALLI

6	Week 6	Zbus Matrix formation	<b>Simulation/Analysis</b>
70	Week 7	Load flow Analysis: Gauss Seidel	<b>Simulation/Analysis</b>
8	Week 8	Load Flow Analysis: Newton Raphson	<b>Simulation/Analysis</b>
9	Week 9	Symmetrical Fault Analysis	<b>Simulation/Analysis</b>
10	Week 10	Unsymmetrical Fault Analysis	<b>Simulation/Analysis</b>
11	Week 11	<b>Mini project Evaluation</b>	<b>Simulation/Analysis Oral viva</b>
13	Week 12	<b>End Sem Examination</b>	

## COURSE ASSESSMENT METHODS

S.No.	Mode of Assessment	Type of assessment	Duration	% Weightage
1.	<b>Assessment I</b>	Evaluation of simulation and Analysis on every lab session		<b>50%</b>
2.	<b>Assessment II</b>	Mini project/Oral viva	Two sessions	<b>20%</b>
3.	<b>Assessment III</b>	End semester examination	1-2 hours	<b>30%</b>

## COURSE EXIT SURVEY



- Feedback from the students during class committee meetings
- Anonymous feedback through questionnaire

### **COURSE POLICY**

- All students are expected to attend all the laboratory sessions
- Students who are absent during regular laboratory sessions have to redo the experiments by their own efforts.

### **ATTENDANCE POLICY** (A uniform attendance policy as specified below shall be followed)

- At least 75% attendance in each course is mandatory.
- A maximum of 10% shall be allowed under On Duty (OD) category.
- Students with less than 65% of attendance shall be prevented from writing the final assessment and shall be awarded 'V' grade.

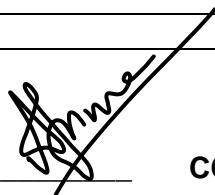
### **ACADEMIC DISHONESTY & PLAGIARISM**

- Possessing a mobile phone, carrying bits of paper, talking to other students, copying from others during an assessment will be treated as punishable dishonesty.
- Zero mark to be awarded for the offenders. For copying from another student, both students get the same penalty of zero mark.
- The departmental disciplinary committee including the course faculty member, PAC chairperson and the HoD, as members shall verify the facts of the malpractice and award the punishment if the student is found guilty. The report shall be submitted to the Academic office.
- The above policy against academic dishonesty shall be applicable for all the programmes.

### **ADDITIONAL INFORMATION, IF ANY**

### **FOR APPROVAL**

Course Faculty



CC- Chairperson



HOD Approved By HOD

Ancees Fashan .



**Guidelines**

- a) The number of assessments for any theory course shall range from 4 to 6.
- b) Every theory course shall have a final assessment on the entire syllabus with at least 30% weightage.
- c) One compensation assessment for absentees in assessments (other than final assessment) is mandatory. Only genuine cases of absence shall be considered.
- d) The passing minimum shall be as per the regulations.

B.Tech. Admitted in				P.G.
2018	2017	2016	2015	
35% or (Class average/2) whichever is greater.		(Peak/3) or (Class Average/2) whichever is lower		40%

- e) Attendance policy and the policy on academic dishonesty & plagiarism by students are uniform for all the courses.
- f) Absolute grading policy shall be incorporated if the number of students per course is less than 10.
- g) Necessary care shall be taken to ensure that the course plan is reasonable and is objective.