

<b>EE7L2</b>	<b>4/4 B.Tech. SEVENTH SEMESTER</b>	<b>Credits: 2</b>
<b>Lecture: --</b>	<b>ELECTRICAL POWER SYSTEMS LAB</b>	<b>Internal assessment: 25 marks</b>
<b>Lab : 3 periods/week</b>		<b>Semester end examination: 50 marks</b>

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**Course Objective:**

The aim of this course is to impart the basic knowledge on different types of faults in power systems and to expose the students to the equipment in electrical engineering practice so that it helps them in industry oriented learning

**Course Outcomes:**

Upon completion of the course, students will be able to:

1. Have hands on experience on various power system studies and different techniques used for system planning.
2. Determine the parameters of various machines used in power systems
3. Understand the characteristics of different relays used in electrical Industry.
4. Determine parameters, loading capability, compensation equipment required in practical transmission network.
5. Design and analyze modern power system networks by using simulink and MATLAB softwares

**List of Experiments****Conduct any TEN experiments**

1. Determination of sub-Transient reactance of a salient pole machine.
2. Determination of sequence impedances of an alternator.
3. Fault Analysis under occurrence of LG Fault & LL Fault.
4. Determination of regulation of non salient pole alternator by EMF, MMF and ZPF methods.
5. Characteristics of microprocessor based under voltage relay.
6. Characteristics of microprocessor based over voltage relay.
7. Characteristics of electromagnetic type IDMT over current relay.
8. Characteristics of static negative sequence relay.
9. Characteristics of static biased differential relay.
10. Evaluation of ABCD parameters for transmission line.
11. Evaluation of surge impedance loading of transmission line.
12. Equivalent circuit of a three winding transformer.
13. Formation of Y-Bus by direct inspection method using MAT LAB
14. Transient stability studies using MAT LAB
15. Simulation of power system stabilizer using SIMULINK
16. Simulation of single area and two area systems using SIMULINK

**Reference Books:**

1. MATLAB and its Tool Books user's manual by Math works, USA.
2. Fundamentals of Switchgear and Protection by J.B.Gupta , S.K. Kataria & Sons,2014.
3. Modern power system analysis by D.P.Kothari and I.J.Nagrath , TMH Publications.
4. Electrical power systems by C.L.Wadhwa, New Age International (P) Limited.