

<b>EE7L3</b>	<b>4/4 B.Tech. SEVENTH SEMESTER</b>	
<b>Lecture: --</b>	<b>ELECTRICAL SIMULATION LAB</b>	<b>Credits: 2</b>
<b>Lab : 3 periods/week</b>	<b>Internal assessment: 25 marks</b>	<b>Semester end examination: 50 marks</b>

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**Course Objective:**

The objective of this lab is to appreciate and use various software tools in electrical engineering for modeling and simulation of different power systems and power electronic circuits in lesser time.

**Course Outcomes:**

After successful completion of the course, the students shall be

1. Able to use the MATLAB, PSIM and PSCAD.
2. Able to program the Modeling and Simulation of various Electrical circuits.
3. Exposed to use of Graphical User Interfaces like SIMULINK etc., for the Modeling and Simulation.

**List of Experiments:**

1. Analysis of three phase circuit representing the generator, transmission line and load using PSCAD
2. PSPICE simulation of single – phase full converter using RLE loads and single phase AC voltage controller using RL& RLE loads
3. Simulation of D. C. circuit for determining thevenin's equivalent & norton's equation using MAT LAB
4. Response of an RLC circuit by parametric analysis using PSPICE
5. Finding stability for a given pulse transfer function using bode plot in MAT LAB
6. Power Flow solution of a power system using MATLAB
7. Fault analysis of a power system using PSCAD
8. Simulation of Buck Chopper & Resonant Pulse Commutation Circuit using PSIM
9. Simulation of single phase inverter with PWM control using PSIM
10. Simulation of op- Amp based integrator & differentiator circuits using MATLAB
11. PID –open loop & closed loop control in PSIM
12. Modeling of electrical machine in PSCAD