

Electrical Simulation Lab

Objective:

To simulate integrator circuit, differentiator circuit, Boost converter, Buck converter, full convertor and PWM inverter.

To simulate transmission line by incorporating line, load and transformer models.

To perform transient analysis of RLC circuit and single machine connected to infinite bus(SMIB).



Sections Handled: IV/I

Major Equipment Details:

Total number of Desktops	70
Number of Desktops Connected In LAN	70
Hardware	Intel Core i5-6500 3.2G 6M 2133 4C CPU – 6 MB Cache- Intel H110 Chipset Mother Board – 8GB DDR 4 RAM – 1TB 7200 SATA HDD – Integrated 10/100/1000Gigabit Nic Card – HP 18.5” LED Monitor – HP USB Keyboard – HP USB Optical Mouse – Three Years Warranty (3-3-3)
Online UPS	EATON Make 2 X 6 KVA Online UPS with 20 12V- 42AH Amara Raja/Quanta Batteries with a min of 2 hours back up
System Software	Windows - 7 Professional – Licensed
Application Software Licensed	<ul style="list-style-type: none"> ▪ MS-Office 2007 ▪ MATLAB R2016a ▪ OrCAD PSPICE A/D(Version16.3) ▪ Turbo c/c++ 4.0 – Freeware.

Faculty In charge with qualification: **M.Sireesha, M.Tech**

Lab Technical name with qualification: **N. Ramesh Babu, Diplamo**

Experiment list as per curriculum:

- 1) Pspice Simulation Of Series Rlc Circuits For (I)Stepinput (Ii) Pulseinput (Iii) Sinusoidal Input
- 2) Pspice Analysis Of Three Phase Circuit
- 3 Pspice Analysis Of Single Phase Full Converter With Rle Loads And Single Phase Ac Voltage Controller With Rlload
- 4) Stability Analysis Of Linear Time Invariant Systems(Bode, Root Locus, Nyquist Plots Using Matlab)
- 5) Power Flow Solution Of Power System Newton–Raphson Technique
- 6) Modelling Of Transformer And Simulation Of Lossy Transmissiion Line

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| 7) Pspice Simulation Of Op-Amp Based Differentiator And Integrator Circuit
8) Simulation Of D.C Separately Excited Motor Using Transfer Function Approach
9) Simulation Of Resonant Pulse Converter And Buck Chopper
10) Simulation Of Single Phase Inverter With Pwm Control
11) Transient Analysis Of A Single Machine Connected To Infinite Bus(Smib). |
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Experiment list beyond the curriculum

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| 1. Dynamic Stability Analysis Of Single Area And Two Area Power System Network
2. Power Flow Solution By Fast Decoupled Method |
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