# Kadi Sarva Vishwavidyalaya

## Faculty of Engineering & Technology
**Second Year Bachelor of Engineering (EE) – Semester III**
With effect from: Academic Year 2018-19

| EE306-N | Simulation Laboratory |
|---|---|
| **Pre-requisite** | |

## Teaching Scheme (Credits and Hours)

| Teaching scheme | | | | Total Credit | Evaluation Scheme | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| L | T | P | Total | | Theory | | IE Marks | CIA Marks | Pract. Marks | Total |
| Hrs | Hrs | Hrs | Hrs | | Hrs | Marks | | | | |
| 00 | 00 | 04 | 04 | 02 | 00 | 00 | 00 | 20 | 30 | 50 |

## Course Objective:

The educational objectives of this course are

- To present a problem oriented introductory knowledge of software which is used in electrical engineering.
- To focus on the study of Mablab, Mi-power and other electrical software.

Experiments shall be performed in the laboratory related to course contents.

## A. Suggested List of Experiments:
1. Introduction to MATLAB
2. Single phase half controlled converter using R and RL load using MATLAB / SIMULINK
3. Single phase fully controlled converter using R and RL load using MATLAB / SIMULINK
4. Three phase fully controlled converter using R and RL load using MATLAB / SIMULINK
5. Single phase AC voltage regulator using MATLAB / SIMULINK
6. Introduction to Simulink Model and challenges in computer simulation.
7. Basic circuit connection and waveform analysis
8. To simulate single phase half wave rectifier using diode as a switch.
9. To simulate single phase full wave rectifier using diode as a switch.

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10. To simulate three phase full wave rectifier using diode as a switch.
11. To simulate clipper circuit.
12. To simulate clamper circuit.
13. Simulation of KVL and KCL using MATLAB.
14. Simulation of Norton's theorem   using MATLAB.
15. Simulation of Thevenin's Theorem using MATLAB.
16. Simulation of Transient Response of a RL Circuit using MATLAB.
17. Simulation of Transient Response of a RC Circuit using MATLAB.

## A. Instructional Method & Pedagogy

- At the start of course, the course delivery pattern , prerequisite of the subject will be discussed

- Lecture may be conducted with the aid of multi-media projector, black board, OHP etc. Attendance is compulsory in lectures and laboratory, which may carries five marks in overall evaluation.

- Two internal exams may be conducted and average of the same may be converted to equivalent of 15 marks as a part of internal theory evaluation.

- Assignment based on course content will be given to the student for each unit/topic and will be evaluated at regular interval. It may carry a weight age of five marks in the overall internal evaluation.

- Surprise tests/Quizzes/Seminar /Tutorial may be conducted and having share of five marks in the overall internal evaluation.

- The course includes a laboratory, where students have an opportunity to build an appreciation for the concept being taught in lectures.

- Experiments shall be performed in the laboratory related to course contents.

## B. Students Learning Outcomes

On successful completion of the course

- The student can acquire the basic knowledge of computer software which application in electrical engineering.
- The students will be able to effectively employ electrical power system and electrical network related examples solved by computer software's.
- On successful completion of the course, a student can acquire the basic knowledge of computer software's used in electrical engineering in field.