Kadi Sarva Vishvavidyalaya, Gandhinagar
Bachelor of Engineering (Electrical Engineering Syllabus)
SIMULATION LABORATORY
B.E. SEM-IV SUBJECT CODE: EE-408

A. **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.

B. **Teaching / Examination Scheme**

SUBJECT		Teaching Scheme				Total Credit	Evaluation Scheme					Total Marks
		L	T	P	Total		THEORY		IE	CIA	PR. / VIVO	
CODE	NAME	Hrs	Hrs	Hrs	Hrs		Hrs	Marks	Marks	Marks	Marks	
EE-408	Simulation Laboratory	0	0	2	2	1	0	0	0	20	30	50

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

C. **Suggested List of Experimets:**

1. Single phase half controlled converter using R and RL loadusing MATLAB / SIMULINK
2. Single phase fully controlled converter using R and RL loadusing MATLAB / SIMULINK
3. Three phase fully controlled converter using R and RL loadusing MATLAB / SIMULINK
4. Single phase AC voltage regulator using MATLAB / SIMULINK
5. Formation of Y bus matrix by inspection / analytical methodusing MATLAB Software.
6. Formation of Z bus using building algorithm using MATLABSoftware
7. Gauss Seidal load flow analysis using MATLAB Software
8. Newton Raphson method of load flow analysis usingMATLAB Software
9. Fast decoupled load flow analysis using MATLAB Software
10. Fault analysis using MATLAB Software
11. Economic dispatch using MATLAB Software
12. Load flow analysis using ETAP Software
13. Fault analysis using MIPOWER Software

D. **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.

E. 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.