SARVAJANIK UNIVERSITY
Sarvajanik College of Engineering and Technology
Bachelor of Technology

B.Tech. Semester VII

Subject Name: Design Based Project **Subject Code: BTEL16701**

Type of course: Professional Course

Prerequisite: Basic Knowledge of Electrical Engineering

Rationale: To enhance employability skills of the students Internship or Project work is required. It provides practical experience in a field of Electrical Engineering and help to reinforce theoretical knowledge gained in different courses to solve real life challenges. The students are given exposure to explore the new developments and techniques, which can lead them to self-employment or even employment generation through extension of the work done in project.

Teaching and Examination Scheme:

TEACHING SCHEME				Theory Marks			Practical Marks		Total
L	T	P	C	TEE	CA1	CA2	TEP	CA3	100
0	0	4	2	0	0	0	60	40	

CA1: Continuous Assessment (assignments/projects/open book tests/closed book tests **CA2:** Sincerity in attending classes/class tests/ timely submissions of assignments/self-learning attitude/solving advanced problems **TEE:** Term End Examination **TEP:** Term End Practical Exam (Performance and viva on practical skills learned in course) **CA3:** Regular submission of Lab work/Quality of work submitted/Active participation in lab sessions/viva on practical skills learned in course

GUIDELINES

General Guidelines for Project

1. The project should be UDP (user defined project)
2. There shall be a supervisors/committee at department level to regulate the quality and quantity of the work of each team. A presentation by the team shall be made at the beginning of the semester.
3. This presentation shall contain the detailed proposal of the project, which includes title of the project, well defined problem and a plan of activities with appropriate timelines. The role of team member shall preferably be defined as far as possible in this proposal itself.
4. The group size of the project team shall be maximum 4 students. In any case it is required to have more students it shall be approved by a committee and head of the department.
5. The stereotype study based project shall be avoided.
   (E.g. study of Power transformer /400 kV substations are few examples, which shall be avoided.)
6. The internal evaluation shall be done at the start of the semester, at the mid of the semester and at the end of the semester. The distribution of internal marks shall be decided by the committee/head of the department.
7. The project work shall be carried out under the guidance of faculty members.
8. Every team shall submit a report at the mid of the semester.
9. A comprehensive report is required to be prepared and submit to the department at the end of the semester.
10. Considering the number of credits and the teaching hours, substantial amount of work is required

to be carried out by student's team. It shall be monitored by the project guide and the department committee. The evaluation shall be done accordingly with due consideration given to the amount of work by internal examiner and external examiner.

11. The team shall be encouraged to publish project work, if possible.
12. The evaluation by external examiner shall be made considering the above guidelines.

Guidelines about the nature of project work

1. The project work can be simulation of circuits/system or hardware based depending upon the area and the complexity of the work involved.
2. If it contains only simulation, it shall be comprehensive. The team is expected to know the various aspects of simulation techniques in detail. The team shall be able to explain the results obtained in detail with all the aspects and different cases.
3. It can be a case study, innovative solution to real life problems, modeling and analysis, design, optimization, hardware prototype, industry defined problem etc.
4. If it is a case study, it shall be a real-world case and of high technical relevance.
5. If the project is about a modeling, the team is expected to know the proper mathematical formulation and justification of the modeling, its limitations and its possible applications. The comparison of performance of various models shall be covered as a part of the work. A detailed analysis of the results shall be done with the help of the model.
6. If the team and guide find it appropriate, the overall work can be combination of different types of work above mentioned.

Suggested Specification table with Marks (Theory/Practical):

% Distribution of Marks					
R Level	**U Level**	**A Level**	**N Level**	**E Level**	**C Level**
20	**20**	**20**	**20**	**20**	**00**

Legends: R: Remembrance, **U:** Understanding; **A:** Application, **N:** Analyze, **E:** Evaluate **C:** Create and above Levels **(Revised Bloom's Taxonomy)**

Note: This specification table shall be treated as a general guideline for students and teachers. The actual distribution of marks may vary slightly from above table.

Course Outcome:

Sr. No.	CO Statement After learning this subject, students will be able to	Marks % weightage
CO-1	Illustrate a sound technical understanding of the subject matter of their project.	20%
CO-2	Begin the identification, formulation and solution of the problem.	20%
CO-3	Design engineering solutions for complex problems using a systematic approach and teamwork.	30%
CO-4	Communicate with engineers and the broader community through written and oral communication.	20%
CO-5	Exhibit knowledge and understanding of engineering and management principles and apply them to the assigned project.	10%

Mapping with POs:

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
CO-1	3	3	3	1	1	1	1	1	1	-	3	-	3	1	1
CO-2	2	3	3	1	3	2	2	2	1	-	3	-	3	1	1
CO-3	1	2	3	1	1	1	1	1	3	-	3	-	3	3	-
CO-4	1	1	2	1	1	1	1	1	1	3	3	3	3	1	-
CO-5	1	1	2	3	1	1	1	1	1	-	3	-	3	1	-
Rationale *															

Rationale*: Explaining why it is matching this particular program outcome