

V Sem B.E (A & R)

Mini Project (Engineering desigN)

Team No/Name:

Team members Name & USN:

**1. 2.**

**3. 4.**

**5. 6.**



Department of Automation and Robotics

CERTIFICATE

This is to certify that the below mentioned team has implemented the project entitled “ “ as part of Mini Project Course, code 17EARW301, in the department of Automation & Robotics, KLE Technological University, Hubballi, during 5th Semester of B.E program for the academic year 2022-23. The project report fulfils the requirements prescribed.

Name USN

1.

2.

3.

4.

5.

Project Guide: A.C.Giriyapur Course Instructors: Amit Talli, Shridhar D

Examiner 1: Examiner 2:

**Contents Page No**

1. Introduction to the broad theme or challenge -
2. Identifying the systematic design process to be followed --- Write a brief note on the Engineering design process. Along with the flow chart and the various phases and steps in the process.
3. Planning & Task Clarification -- Planning, Identifying users, collecting need statements and generating initial problem statement

3.1 Planning & Scheduling – Gantt chart

3.2 Market research and analysis

Identify few initial Users, Establish Collaboration with them and collect information, Needs, etc. and create User Personas and Empathy Map.

Identify three most important Needs of your users.

Create scenarios and use cases with the User Persona situated in the environment.

Select a suitable Need acceptable to the entire Team.

Generate the Initial Problem Statement from the Need Statement

Identify More Users, Establish Collaboration with them and collect information, Needs, etc. and create User Personas and Empathy Map.

Create scenarios and use cases with the User Persona situated in the environment.

Write User Stories, Identify Needs and Requirements.

Categorize and Prioritize the Requirements.

3.3 Generate the Final Problem Statement.

3.4 Competitive Products benchmarking and Patent Search

3.5 Identify metrics to measure success

3.6 Design specifications

1. Conceptual Design

4.1 Identification of essential problems – Revised problem statement

4.2 Identification of Overall function

4.3 Detailed functional analysis – Establish function structures

4.4 Search for working principles and working structures

4.5 Generating alternate solutions

4.6 Evaluation of alternate solutions

4.7 Preliminary design – Final selected concept

1. Embodiment of Design
   1. Product architecture
   2. Configuration design
   3. Parametric design
2. Detailed Design
   1. Selection of materials
   2. Elaborate detail drawings and parts lists
   3. Bill of materials
   4. Costing

6.3 Process sheets

6.4 Documentation

1. Working model or Prototype – Include photographs of parts and assemblies
2. Testing & Evaluation
3. Conclusion (what worked and what did not work, improvements)
4. Appendix
5. References