**ELECTRIC SOLAR VEHICLE CHAMPIONSHIP**

**ESVC ENGINEERNING 2024-25**



Note:

 1. Background Image can be changed for better aesthetics if required.

2. Logo’s and the contents should remain in the same place as per the template.

 3. The font should be same throughout the report with a proper visible size.

 4. Before starting with the report go through the instruction in the last page of this report.

**Team Name:**

**Team ID:**

**Report Title:**

**Report Subtitle:**

***ABSTRACT:***

**INTRODUCTION**

This template, modified in MS Word 2007 and saved as a “Word 97-2003 Document” for the PC, provides authors with most of the formatting specifications needed for preparing electronic versions of their papers. All standard paper components have been specified for three reasons: (1) ease of use when formatting individual papers, (2) automatic compliance to electronic requirements that facilitate the concurrent or later production of electronic products, and (3) conformity of style throughout proceedings. Margins, column widths, line spacing, and type styles are built.

**CHASSIS DESIGN REPORT:**

* Rulebook Constraints
* Dimension Parameters
* Design Considerations
* Material Selection.
* Methodology
* Roll Cage Analysis
* Include the pictures of Chassis frame, Analysis (front, rear, side, etc.) and number the Figures.
* All views of chassis
* Results. (Load type, Load Calculated, Stress on chassis, Deflection in Chassis, Factor of Safety).

 *(NOTE: The maximum Number of pages that can be used for Chassis section is limited to 5 including this page. Complete report should be in the same IEEE format)*

**STEERING DESIGN REPORT**

* Introduction
* Rulebook Constraints
* Dimension Parameters
* Steering Geometry:
* Design Considerations
* Component Selection.
* Working principle
* Include the pictures of design, component, and assembly. (If any)
* Formulation and Calculations.
* Tabulations. (If any)
* Results. (Turning radius, steering ratio, steering angle, driver effort etc.)

*(NOTE: The maximum number of pages that can be used for Steering section is limited to 3 including this page. Complete report should be in the same IEEE format)*

**BRAKING SYSTEM DESIGN REPORT**

* Introduction
* Rulebook Constraints
* Force consideration.
* Working principle
* Design Considerations
* Component Selection.
* Include the pictures of design, Components, assembly. (If any)
* Part analysis (If any)
* Formulation and Calculations.
* Tabulations. (If any)
* Results. (Stopping distance, Stopping time, Driver effort, pedal force etc.)

*(NOTE: The maximum number of pages that can be used for Braking system section is limited to 3 including this page. Complete report should be in the same IEEE format)*

**SUSPENSION DESIGN REPORT**

* Introduction
* Rulebook Constraints
* Force consideration.
* Working principle
* Design Considerations
* Component Selection.
* Include the pictures of design, Components, assembly. (If any)
* Part analysis (If any)
* Dynamics analysis / simulation.
* Formulation and Calculations.
* Tabulations. (If any)
* Results. (CG location, Roll center location, Wheel base, track width, caster, camber, toe angles, spring rate, suspension geometry and its parameters etc.)

*(NOTE: The maximum number of pages that can be used for this section is limited to 4including this page. Complete report should be in the same IEEE format)*

**TRANSMISSION DESIGN REPORT**

* Introduction
* Rulebook Constraints
* Force consideration.
* Working principle
* Design Considerations
* Component Selection.
* Include the pictures of design, Components, assembly. (If any)
* Part analysis (If any)
* Dynamics analysis / simulation (If any)
* Formulation and Calculations.
* Tabulations. (If any)
* Results. (Torque, Speed, power etc.)

*(NOTE: The maximum number of pages that can be used for this section is limited to 5including this page. Complete report should be in the same IEEE format)*

**MOTOR DESIGN REPORT**

* Introduction
* Rulebook Constraints
* Load consideration.
* Working principle
* Design Considerations
* Component Selection.
* Include the pictures of design, Components, assembly. (If any)
* Circuit design (If any)
* simulation (If any)
* Formulation and Calculations.
* Tabulations. (If any)
* Results. (Power, Voltage, Current, Torque, RPM, Efficiency etc.)

*(NOTE: The maximum number of pages that can be used for this section is limited to 4 including this page. Complete report should be in the same IEEE format)*

**MOTOR CONTROLLER DESIGN REPORT**

* Introduction
* Rulebook Constraints
* Load consideration.
* Working principle
* Design Considerations
* Component Selection.
* Include the pictures of design, Components, assembly. (If any)
* Circuit design (If any)
* simulation (If any)
* Formulation and Calculations.
* Tabulations. (If any)
* Results.(Power, Voltage, Current, throttle, Torque & RPM Control, Efficiency etc.)

*(NOTE: The maximum number of pages that can be used for this section is limited to 4 including this page. Complete report should be in the same IEEE format)*

**BATTERY DESIGN REPORT**

* Introduction
* Rulebook Constraints
* Load consideration.
* Working principle
* Design Considerations
* Component Selection.
* Circuit design (If any)
* simulation (If any)
* Formulation and Calculations.
* Tabulations. (If any)
* Results.(Power, Voltage, Current,Charging rate, Efficiency etc.)

*(NOTE: The maximum number of pages that can be used for this section is limited to 3 including this page. Complete report should be in the same IEEE format)*

**SOLAR PANEL DESIGN REPORT**

* Introduction
* Rulebook Constraints
* Load consideration.
* Working principle
* Design Considerations
* Component Selection.
* Include the pictures of design, Components, assembly. (If any)
* Circuit design (If any)
* simulation (If any)
* Formulation and Calculations.
* Tabulations. (If any)
* Results.(Material, Power, Voltage, Current, Charging rate, Efficiency etc.).

*(NOTE: The maximum number of pages that can be used for this section is limited to 4 including this page. Complete report should be in the same IEEE format)*

**SOLAR CONTROLLER / MPPT DESIGN REPORT**

* Introduction
* Rulebook Constraints
* Load consideration.
* Working principle
* Design Considerations
* Component Selection.
* Include the pictures of design, Components, assembly. (If any)
* Circuit design (If any)
* simulation (If any)
* Formulation and Calculations.
* Tabulations. (If any)
* Results.(Power, Voltage, Current, Charging rate, Efficiency etc.)

*(NOTE: The maximum number of pages that can be used for this section is limited to 4 including this page. Complete report should be in the same IEEE format)*

**WIRING DIAGRAM AND ACCESSORIES DESIGN REPORT**

* Introduction
* Rulebook Constraints
* Design Considerations
* Include the pictures of design, Components, assembly. (If any)
* Circuit design (If any)
* simulation (If any)
* Formulation and Calculations.
* Tabulations. (If any)
* Results.(Power, Voltage, Current, Circuit diagram etc.)

*(NOTE: The maximum number of pages that can be used for this section is limited to 3including this page. Complete report should be in the same IEEE format)*

**REFERENCES**

*Kindly mention the important Books, Website, Research papers etc. which you referred while designing your vehicle.*

*(NOTE: The maximum number of pages that can be used for this section is limited to 1including this page. Complete report should be in the same IEEE format)*

**REPORTING INSTRUCTION.**

1. *Total Number of pages should Not Exceed 50.*
2. *The pictures should be present in the corresponding sections in the format given below.*

*Specimen of picture in report*

**

*Figure 1.1: Completed solar car*

1. *If any The Numerical / Calculated parameters is present in table format in the corresponding sections, the following table format should be followed.*

|  |  |  |  |
| --- | --- | --- | --- |
| S.No. | Table A | Table B | Table C |
| 1 |  |  |  |
| 2 |  |  |  |
| 3 |  |  |  |
| 4 |  |  |  |

*Table 1.1: Brake Parameters*

1. *Ensure the format of the report is proper after converting to PDF and send the report in PDF format only.*
2. *Remove all the Notes / Special reporting instruction after the report completion.*