TABLE OF CONTENT

Certificate……..……i

Declaration……..……ii

Acknowledgement……..……iii

Abstract……..……iv

List of Figures……..…….…viii

List of Abbreviation and Symbol used…….……...x

List of Tables……..xi

Chapter 1 – INTRODUCTION……..1-3

1.1 Formula 1
1.2 Student Formula
1.3 Scope of Project
1.4 Team Formation
1.5 Motivation

Chapter 2 - COMPONENT USE IN F1 CAR……...……4-9

2.1 Engine
2.2 Differential
2.2.1 Differential (That We Use)
2.3 Tyres
2.3.1 Tyre Specification:
2.4 Brakes
2.4.1 Types of Brake
2.4.2 Disk Brake

Chapter -3 CHASSIS CONSTRUCTION…….……10-16

3.1 Chassis Construction Methods
3.1.1 Tubular Spaceframe
3.1.2 Metal Monocoque
3.1.3 Composite Monocoque
3.2 Our Design Chassis
3.2.1 Chassis Procedure
3.2.2 Chassis Material Considerations
3.2.2.1 Mild Steel Square and Round Tube
3.2.2.2 Aluminium
3.2.3 Front Bulkhead

3.2.4 Front Roll Hoop
3.2.5 Front Bulkhead Support System and Front Hoop Supports
3.2.6 Main Hoop, Main Hoop Bracing, Shoulder Harness Mounting Bar
3.2.7 Side Impact Structure

Chapter -4 STEERING SYSTEM & OTHER COMPONENT…..17-27

4.1 Steering System
4.2 Steering Rack
4.3 Description of the Steering System Elements
4.4 Steering Wheel
4.5 Steering Column
4.6 Universal Joint
4.7 Tie Rod
4.8 Ball-And-Socket Joint
4.9 Steering Arms
4.10 Steering Geometry
4.10.1 Camber
4.10.2 Caster
4.10.3 Toe In and Toe Out
4.10.4 Steering Axis Inclination (King Pin Inclination)
4.11 Types of Steering
4.12 Rack And Pinion (That Use In Our Project)
4.13 Steering Geometry Parameters
4.14 Master Cylinder
4.15 Technical Specification of the Vehicle Dimension (mm)

Chapter -5 CALCULATIONS……...….28-33

5.1 Calculation of the Force to Turn the Wheels

5.2 Calculation of Bending Strength and Bending Stiffness

5.3 Calculation of Maximum Acceleration

5.4 Calculation of Braking Force

5.5 Stopping Time

Chapter -6 GANTT CHART……..……34-35

Chapter -7 PLEASE PROVIDE DAY WISE PLAN (PPDWP)…...…36

Chapter – 8 COST ANALISYS REPORT……..…37

Chapter- 9 STEP TO STEP PROCEDURE.....…...38

Chapter -10 APPLICATION……..…….41

Chapter – 11 CONCLUSIONS & FUTURE RECOMMENDATIONS….42

11.1 Future Recommendations

11.2 Conclusion

Chapter – 12 REFERENCE…….43