

Department : **Mechanical**

Year : **2014-2015**

Group No: **11**

Guided By

**PROF. J. B. PATEL**

## **SMT. S. R. PATEL ENGINEERING COLLEGE, UNJHA**

### **Project Title**

### **DESIGN AND FABRICATION OF ROLL CAGE OF A CAR**

#### **Abstract:**

Our study aims to design, develop and fabricate a roll cage, in accordance with the rulebook of BAJA-2015 given by SAE. A roll cage is a skeleton of an All-Terrain Vehicle (CAR). The roll cage is the Structural base which protects the occupant in case of impact and roll over incidents. Here we are going to deal with design of roll cage for an ATV considering various loading tests like Front Impact, Side Impact and Rear Impact. We have focused on every point of roll cage to improve the performance of vehicle without failure of roll cage. Finally the roll cage will be fabricated as per the tools and techniques available in our workshop.

Baja SAE-India is an intercollegiate engineering design competition where each team's goal is to design and build a prototype of a rugged, single seat, off-road recreational vehicle, which should be able to negotiate rough terrain without damage. One of the most fundamental components of the vehicle is the roll cage, which is essentially a minimal three-dimensional space surrounding the driver. Its primary function is to provide safety to the driver, especially in the case of a rollover, and it also serves as the chassis for the vehicle, providing mounting points for all the major systems and aggregates of the vehicle. It therefore goes through intense loading scenarios, and so to make it high-strength, is absolutely necessary which we have somewhat tried to prove it over here in this project according to the specifications and other constraints as per the Rulebook of SAE BAJA – 2015. We have also minimized the weight for the compatibility.

And finally our design got finalized. So now we will proceed for the fabrication in the next semester as per the design we finalized.

#### **Prepared By:**

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