

# Design Solution Stage

Rice Robotics Club - URC Wheel Design

## Problem Decomposition



Functional Decomposition Diagram

Figure 1: Functional Block Diagram

## Key Functions & Features

Our design must satisfy the following core functional blocks:

**Traction Interface:** Must grip soft sand and rock surfaces (Grousers/Tread).

**Structural Support:** Support 50kg rover load without deformation (Core/Spokes).

**Mounting Interface:** Securely attach to rocker-bogie suspension (Hub).

**Impact Dampening:** Absorb shock from drop tests and boulders (Flexible Material/Geometry).