

Baja SAE 2016: Raider

Advisers: Prof. J. Michael McCarthy, Robert "Smitty" Smith, Philip Chipman



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Background

The Baja SAE competition series is an annual intercollegiate challenge, hosted by the Society of Automotive Engineers, for students to design, manufacture, and validate an off-road racecar prototype by applying their engineering knowledge.

Objectives

- Rules-compliant vehicle
- Complete the four hour endurance race
- Top 50 ranking

Design Requirements

- Maximum width: 64"Maximum length: 108"
- Minimum driver helmet clearance: 6"
- Minimum driver body clearance: 3"

Design Goals

- Vehicle weight: 400 lbs without driver

- Wheel base: 65"

Track width: 51" front, 48" rearSteering wheel: 360° lock-to-lock

Suspension travel: 12" front and 10" rear

Static:

- Design review

Sales presentation

Technical inspection

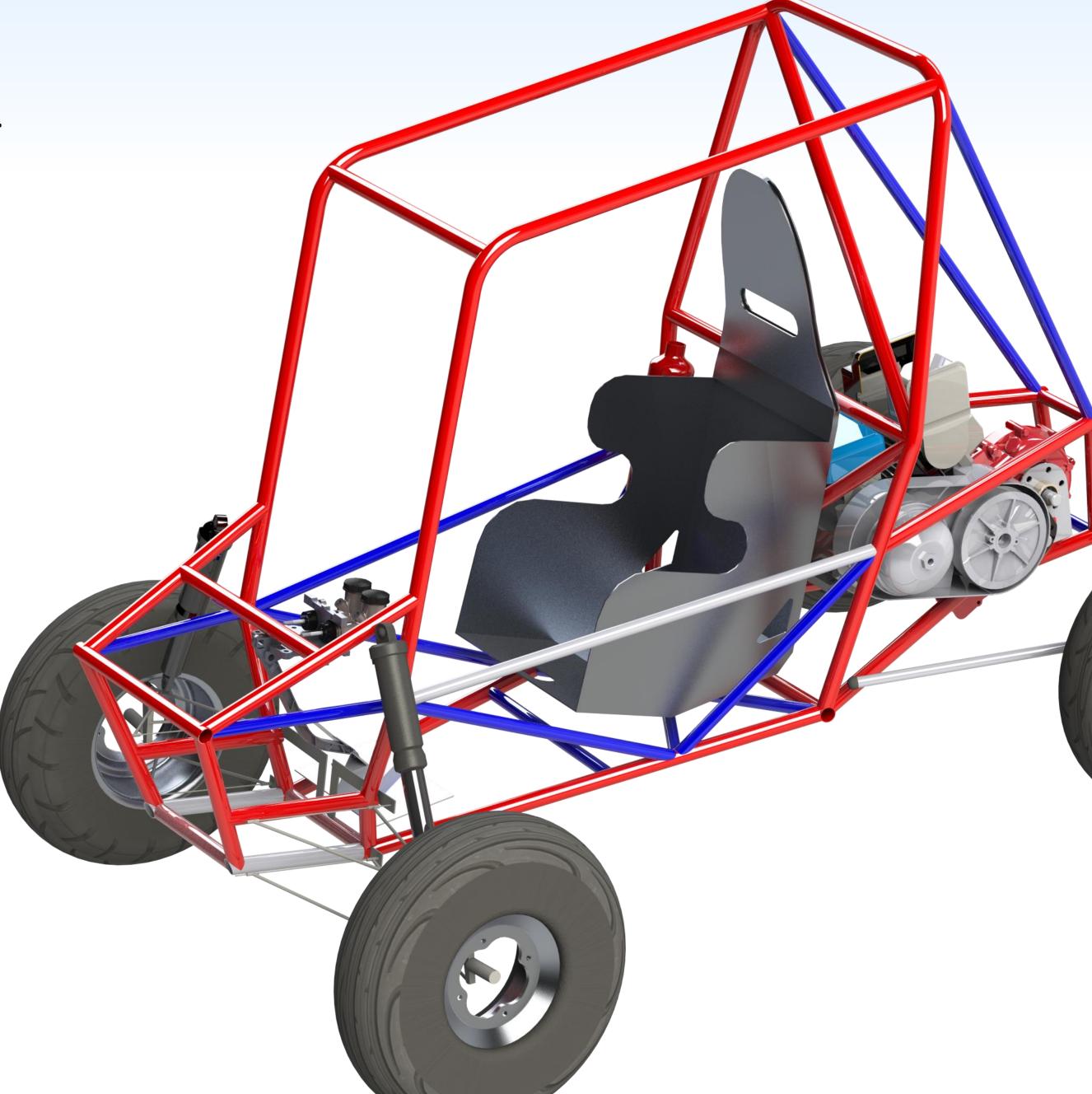
- Top speed: 37 mph

Competition events

Dynamic:

- Acceleration

- Hill climb
- Maneuverability
- Rock crawl
- Four-hour endurance race

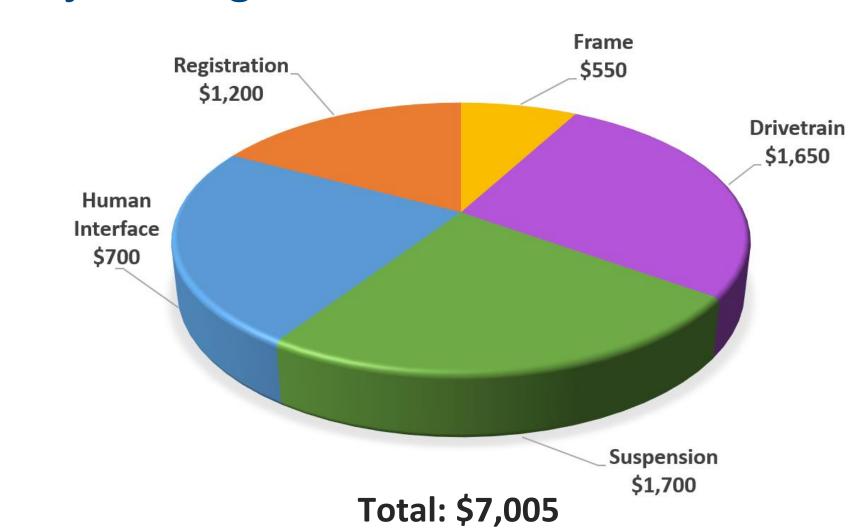


Milestones

Design phase
Design Review
Manufacturing begins
Vehicle completion
Frame design check
Cost report
Design phase
Fall, Weeks 8-9
Fall, Week 8
3/6/2016
1/18/2016
2/29/2016
Design report
4/5/2016

Project Budget

Competition



Team Structure

Program Manager: Chief Engineer: Nawid Mehrzai Danny Kim **Suspension: Chassis: Human Interface:** Powertrain: Ryan Roach Kurtis Wragg Kaitlin Robinson Danny Kim Team: Team: Team: Team: Angel Gonzalez Humberto Gaeta Cheri Chomchuensawat Luis Ayala Andres Olmedo Chirantha Kaluthan Miguel Blanco Jacob Gumke John Pena Zachary Pearce Mehdi Razouane Isidro Calderor Melvin Lucas Tuo Han Jason Yee **Triet Tran** Jian Wang



