

Baja Capstone Project

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Abstract

The Baja team will conduct a study to characterize the engine vibrations in this year's car. This study provides information to create an engine mounting system for the Baja car that will reduce the amount of vibration transfer from the engine into the rest of the chassis. The objectives of this senior design capstone project are: (1) Create a CAD model of the engine to be used for vibration analysis. Each individual part of the engine will also be studied to find its resonant frequency. All parts will then be assembled in a CAD model. (2) The vibration analysis will utilize the shaker table available at the research lab of Dr. Oumar Barry. (3) Prototype design: The prototype shall replicate the CAD model and will be use the outcomes of vibration analysis and testing of the shaker table.

The goals of this project are: Design an engine mount that absorbs the vibrations produced by the Briggs and Stratton 10 HP engine. The engine mount material be chosen to reduce cracking observe in the past years. The design is expected to reduce vibrations in the entire Baja car and provide better comfort and ergonomics for the driver.