

Status:

Introduction

The Capstone Project is an opportunity for engineering students to demonstrate their knowledge and learn about topics that might lead to a future career. For our groups project, we are looking at developing an engine control system (ECS) for a small motor. This project idea stems from a past Capstone proposal where a team was intended to integrate an engine controller, as well as develop a fuel system and airbox for a 600cc Honda engine that was to be used by the SF-1 engineering competition team. Our team is very interested in a project of similar scope, to be accomplished in Stages. Time, and budget permitting, our group would progress to Stage 2 – if the deliverables in Stage 1 have been completed and signed off on.

Stage 1 Project Goals:

- Integrate an engine control module (ECM) with required sensors to existing engine. o Inquire about microsquirt or megasquirt controllers.
 - o Tune engine fuel map (or VE Table) and spark advance, discuss the theory behind the principles.
 - o Inquire about open vs. closed loop fuel strategies
 - o Determine type of injector fire sequence (batch fire, sequential, bank).

- Design high pressure fuel system using appropriately sized fuel injectors and fuel pump.
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