

Senior Design Project Description for FALL 2016

Project Title: Blade Airfoil Optimization (HUSQ_BLADE)

Supporter: Husqvarna

Supporter Technical Representative: ASSIGNED

Faculty Mentor: _____ ASSIGNED TBD (check one)

Single Team Dual Team _____ (check one)

Personnel (EN/ET): _____ E, _____ Cp, _____ Cv, 5 M, _____ SE

(Complete if the number of students required is known)

Expected person-hours: (250 per student)

Description of Project:

Husqvarna is looking to optimize the blade design for their lawnmowers to make the machines more efficient and quieter. To do this the blade airfoil design needs to be optimized. This project is to use a combination of analysis and experimental measurement to accomplish this.

Initial Project Requirements (e.g. weight, size, etc.):

The optimized blade design should accomplish the following:

- Reduce noise
- Increase lift
- Prevent boundary layer separation

The optimization is to be accomplished using CFD analysis. The results are to be verified based on measurements taken from an existing lawnmower.

Expected Deliverables/Results:

The deliverable will be a report summarizing the analysis with the experimental data and a recommendation for the optimized blade design.

List here any specific skills or knowledge needed or suggested (If none please state none):

An interest in CFD is beneficial. At least one team member will either have to be familiar with CFD or willing to learn CFD.