UNC CHARLOTTE
The WILLIAM STATES LEE COLLEGE *of* ENGINEERING

UNC Charlotte – Lee College of Engineering Senior Design Program
Company Information

Company Name	Mechancial Engineering – Motorsports	**Date Submitted**	*11/19/2020*
Project Title	FSAE Aero Phase 2 **(FSAE_AERO2)**	**Planned Starting Semester**	Spring 2021

Funding:

What is the source of funds that will be used to cover all of the direct costs of this project? ME Department?_____

Is this source of funds already secured? Yes ___x____ No _____

Technical Contact(s)*

	Technical Contact 1	**Technical Contact 2**	**Technical Contact 3**
Name	Dr. Charles H. Jenckes		
Phone Number	704.953.9895		
Email Address	cjenckes@uncc.edu		

*We would like to have more than one technical contact, so there is a back-up in case of travel, sickness, job re-assignment, etc.

Personnel

Typical teams will have 4-6 students, with engineering disciplines assigned based on the anticipated Scope of the Project.

Please provide your estimate of staffing in the below table. The Senior Design Committee will adjust as appropriate based on scope and discipline skills:

Discipline	**Number**	**Discipline**	**Number**
Mechanical	4	Electrical	
Computer		Systems	
Other ( )			

Project Overview and Requirements:

The SAE International Formula SAE program is an engineering design competition for

undergraduate and graduate students. The competition provides participants with the opportunity to enhance their engineering design and project management skills by applying learned classroom theories in a challenging competition. The engineering design goal for teams is to develop and construct a single-seat racecar for the non-professional weekend autocross racer with the best overall package of design, construction, performance and cost.

The concept behind Formula SAE is that a fictional manufacturing company has contracted a design team to develop a small Formula-style racecar. The prototype racecar is to be evaluated for its potential as a production item. The target marketing group for the racecar is the non-professional weekend autocross racer. Each student team designs, builds and tests a prototype based on a series of rules whose purpose is both to ensure onsite event operations and promote clever problem solving. The vehicle will be inspected in a series of tests to ensure it complies with the competition rules; in addition, the vehicle with driver will be judged in many performance tests on track. The rest of the judging is completed by experts from motorsports, automotive, aerospace and supplier industries on student design, cost and sales presentations.

The goal of this project is to design and create an aero package for FSAE competition car.

Expected Deliverables/Results:

Deliverables include:

- 3D CAD Model of Aerodynamic package
- CFD simulations for all packages analyzed
- All required course documents and deliverables
- Bolt on ready Aero Package

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

- Fluids
- MEGR 3242 (Applied Vehicle Aerodynamics preferred