UNC CHARLOTTE
The WILLIAM STATES LEE COLLEGE *of* ENGINEERING

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

Company Name	ISL	**Date Submitted**	*11/12/2020*
Project Title	Design and development of a lunar lander system **(UNCC_ISL_LUNAR)**	**Planned Starting Semester**	Spring 21

Funding:

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

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

Technical Contact(s)*

	Technical Contact 1	**Technical Contact 2**	**Grader**
Name	Jerry Dahlberg		
Phone Number	704-687-1394		
Email Address	jerry.dahlberg@gmail.com		

*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:

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Discipline	**Number**	**Discipline**	**Number**
Mechanical	4	Electrical	1
Computer	1	Systems	1
Other ( )			

Project Overview and Requirements:

One of the many ongoing missions of NASA is to design, develop and test lunar lander systems that are unique in their ability to safely land, recover specific types of material and data and transmit that data back to earth.

This project will design and develop a model of a lunar lander that is capable of:

a) Withstanding a landing force of 100 Nm of force
b) Upright itself if it lands in an orientation other than upright.
c) Traverse the landscape from its "landing" location to a sample gathering location.
d) Transmit location and orientation data to a base station
e) Gather a sample of 20 mL of "lunar ice"
f) Transport the sample in an onboard container 5 meters.
g) Maintain power a minimum of 3 hours without losing functionality.
h) All of these tasks should be done autonomously.

Expected Deliverables/Results:

Deliverables include:

- Full design package to detailed drawings and electrical schematics.
- A working prototype capable of completing all of the listed tasks.
- The complete working code and interface.
- Complete test plan with results
- Complete documentation of data analytics via Design of Experiments

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

- SEGR4141-Engineering Experimental Design – For Systems Student