



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

Company Name	Biomedical Engineering Concentration.	Date Submitted	11/08/2021
Project Title	Low-cost Robotic Arm (BIO ROBOTIC)	Planned Starting Semester	Spring 2022

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		Electrical	1
Computer	1	Systems	
Other (BME concentration)	3		

Project Overview and Requirements:

Description of project and desired staffing.

This project aims to develop a low-cost robotic arm to assist people with disability. The robotic arm should be light weight (<10 lb), with a movable base, multi-axial, and gripping function. It should be able to hold over 2 lb weight. Potential applications include assisting people with arm disability or without arms to pull up or down pants, move objects to a desired location, and other daily needs.

Desired staffing: at least three students from BME concentration who understand human arm functions for manipulation, holding, gripping etc, design and fabrication of a prototype, one or two students who understand controls and computer coding etc.

Expected Deliverables/Results:

Deliverables include:

- Functional prototype.
- Hardware and software package

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



- Familiarity or interest in 3-D printing
- Understanding human arm functions (MEGR 3234, MEGR 3097)
- Good at control and computer coding