ME 5741 Spring 2022: **Updated: 3/24**

Project #2: Actuation and Grasping System

Team size: 1-3 members.

Due: **Thursday 4/07 start of class** **Submit report by:** **Monday 4/11 @ 11:59 PM**	Project worth 30% of final grade. Grade distribution: Report: 65% Demo + Creativity: 35% **Instructor reserves the right to change grading scale** Project grade will be based off reasoning, effort, detail, and creativity.

You are to design and fabricate a grasping system that uses a set of "fingers" to accomplish the following:

Your system must grasp with the "fingers" an object:

- of ~~at least~~ up to 1 lb (~454 g).
- within 8 sec.
- and hold for at least 45 sec.
- of arbitrary stiffness.
- of maximum dimension up to 4 inch (~10.2 cm).
- without damage to the object.

Other comments/constraints:

1) The system must have "fingers", no more than 4.
2) The system must be autonomous once initiated.
3) Your system will be tested with a set of (currently) unknown objects.
3) Any actuation method is acceptable (within reason and safety).
4) Have some biomechanical element to the design → "fingers"
5) NO KITS!

Report:

Formatting Requirements:

- Justify text (distribute text evenly between margins)
- Cover page: Title, name(s), section, date. Etc...
- 1 inch margins
- 12 pt. Times New Roman or Calibri, Sections can be bold or larger font (Max 15 pt.).
- Line spacing: 1.5 spaced

Include Sections: (suggested, but any other section formatting is fine)

Cover Page
Abstract (Executive Summary)
Introduction
(Summarize the the importance of your system and objective)
System Design
(An overview of the system, Task related requirements, hardware related requirements, electrical related requirements, other requirements)
Materials and Manufacturing
(Manufacturing and methods)
Analysis and Results
(Overall results of analysis and testing, technical discussion)
Conclusion
References
Appendix
(Other relevant information)