Project I Description

Project Name: **Improved Exoskeleton Design for Paralyzed Athlete**

Sponsor: **Phoenix Industries – LAU – Michael Haddad**

Team Size: **3 MEE Students**

2 teams

Project Overview
Michael Haddad is a T4-T5 paralyzed athlete suffering several drawbacks from his existing exoskeleton. Normally similar paralyzed cases can't stand-up or walk. The current exoskeletons are not designed to support his aggressive athletic maneuvers such as hiking and stair climbing. The first goal of the project is to redesign several components of his exoskeleton system to reduce stress points, support stair climbing, improve its reliability, and reduce its weight. The second goal is to install a system on the exoskeleton to recover part of the kinetic energy Michael is losing during his innovative walking technique.

Project Areas and Majors needed	
Kinematics (1 MEE Student)	CAE/ CAD (2 MEE Student)

Project Deliverables
Design and Build the following component of the exoskeleton system: • Reliable, durable, and lightweight crutches. • Linking the upper and lower parts of the exoskeleton while retaining mobility. • Design and Manufacturing of stair handle supports • Design and integrate an optimal kinetic energy saving device