

Interactive Exercise Machine

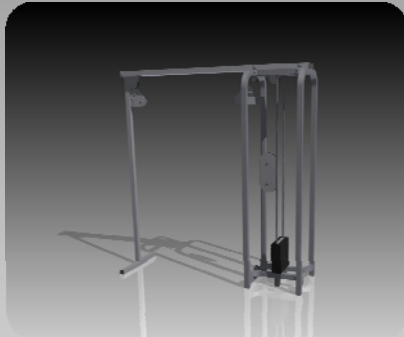
Team Members: Mason Hinton and Jason Evans

Advisors: Dr Robert LeMaster and Dr Somsak Sukittanon

Objective: To design an interactive exercise machine that addresses the most critical reasons people discontinue use.

Features:

- Able to record and save exercise data
- Contained within a 8'x4'x8' space
- Provides safe and effective workout
- Intuitive touch screen interface



Mechanical Design

Incorporates cable crossover design to combine the safety of typical machines with the dynamic nature of free weight exercises.

Utilizes movable “pulley harness” to bridge two discreet cable systems.

Provides a variety of common exercises in one unit that can be installed within a residence.

Adjustable to accommodate users of various fitness levels and heights.

Designed to be compatible with commonly available handles, ropes, and other attachments.

Provides smooth and constant resistance throughout the length of each repetition.

Electrical Design

Features a touch screen device that displays the weight and repetitions for a selected exercise.

Weight and number of repetitions are recorded from inferred sensors along the weight stacks.

Resistance of bike is controlled using servo actuator based on randomly generated terrain

Modular design of control unit allows quick transfer between weight machine and exercise bike apparatuses .

Exercise data can later be saved to a flash drive and viewed on computer

Calculates speed and distance of an exercise bike.