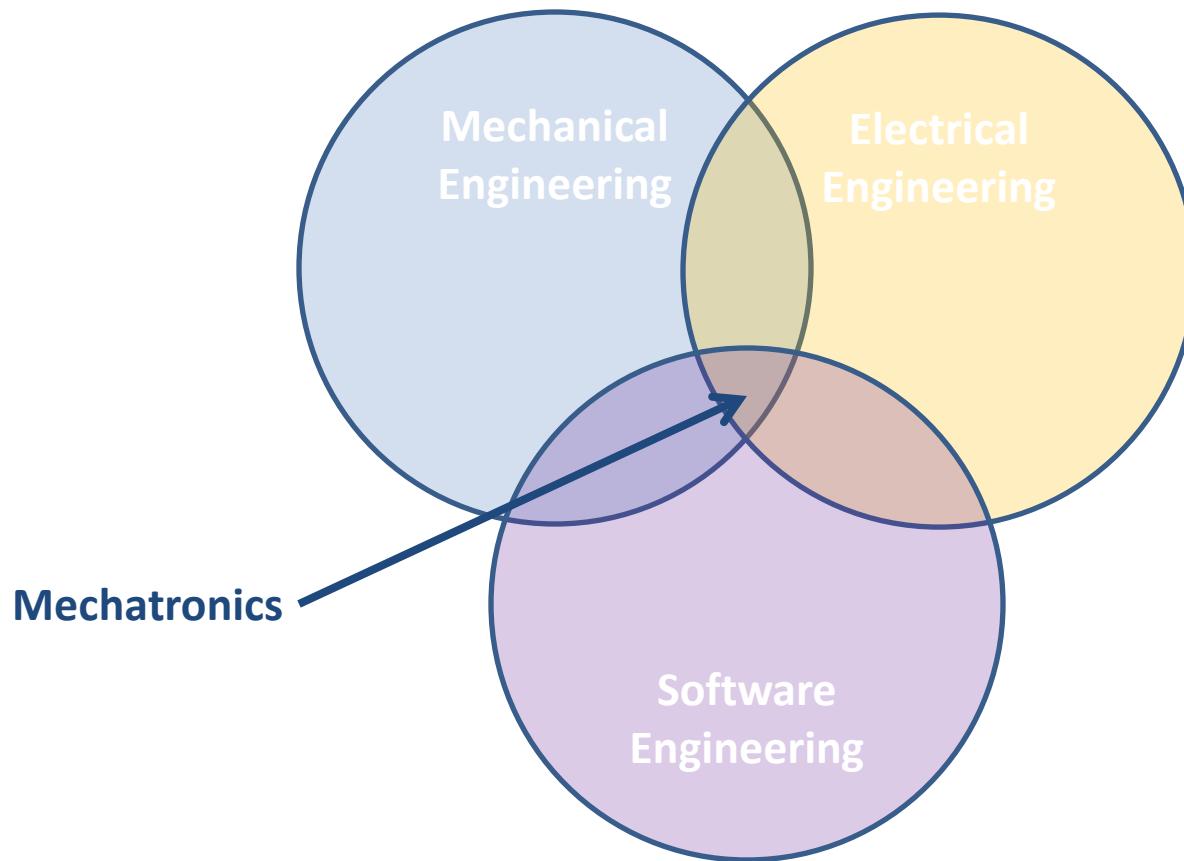


Introduction to Mechatronics

Mark Colton

Department of Mechanical Engineering
Brigham Young University

What Is Mechatronics?



What Is Mechatronics?

Interdisciplinary approach to creating modern systems

Subsystem design

System integration

Multidomain modeling and analysis

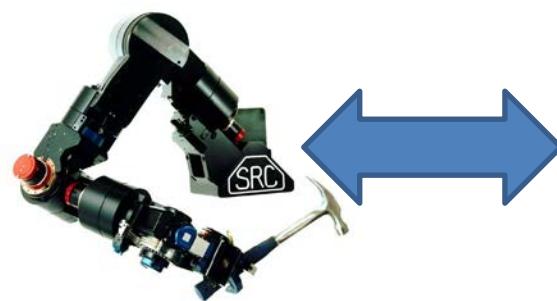
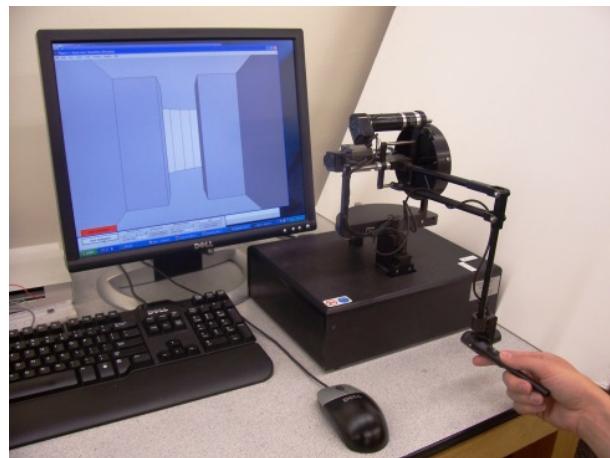
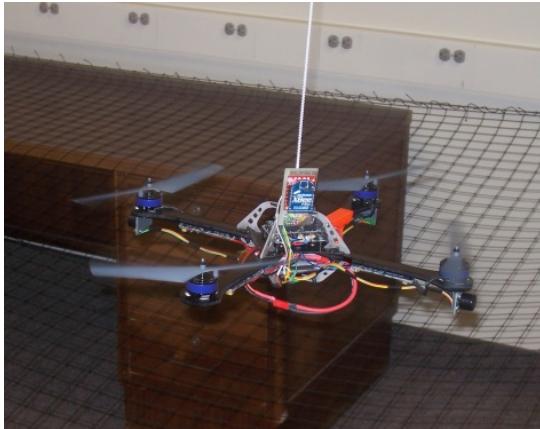
Unifying components:

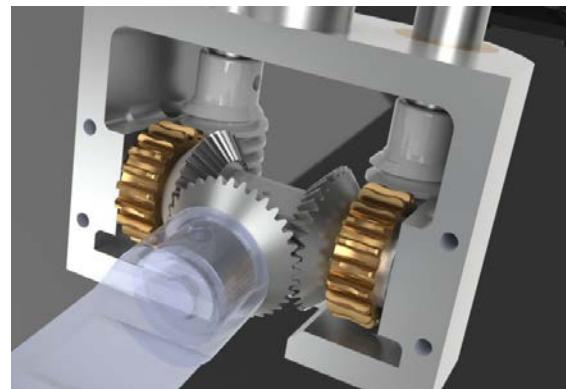
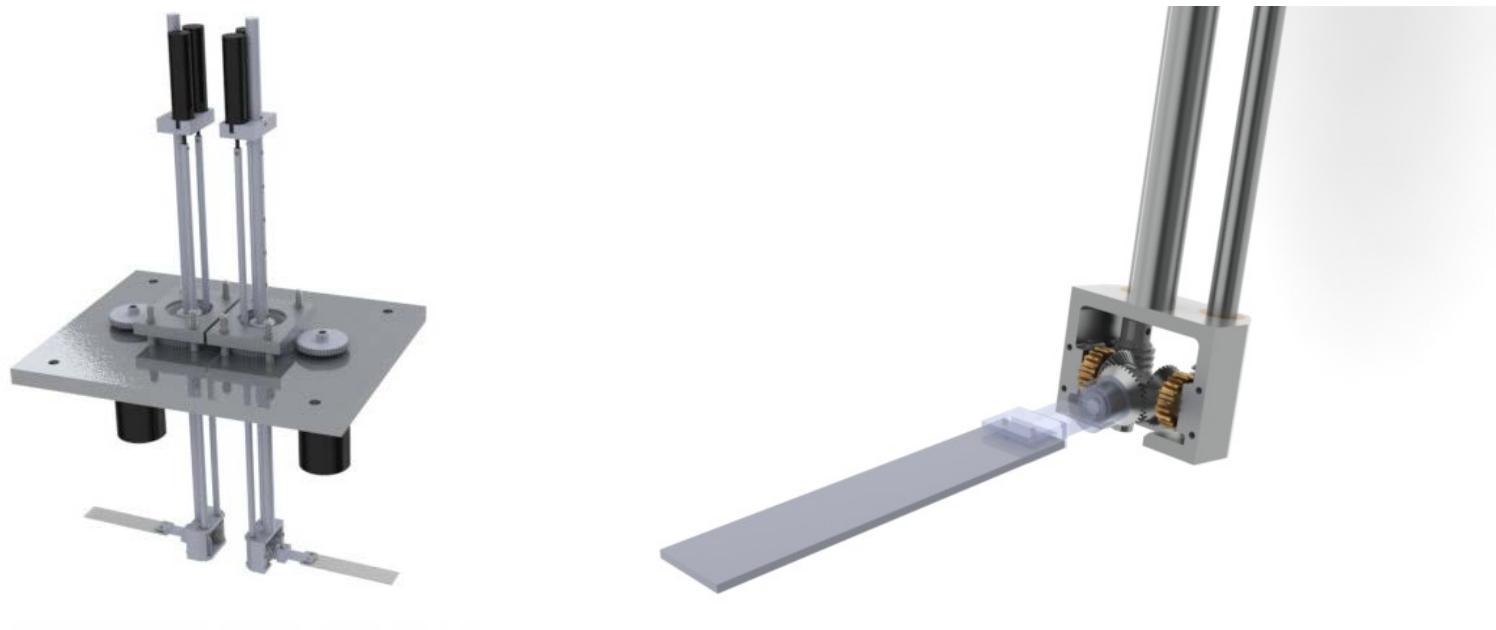
Sensing (input)

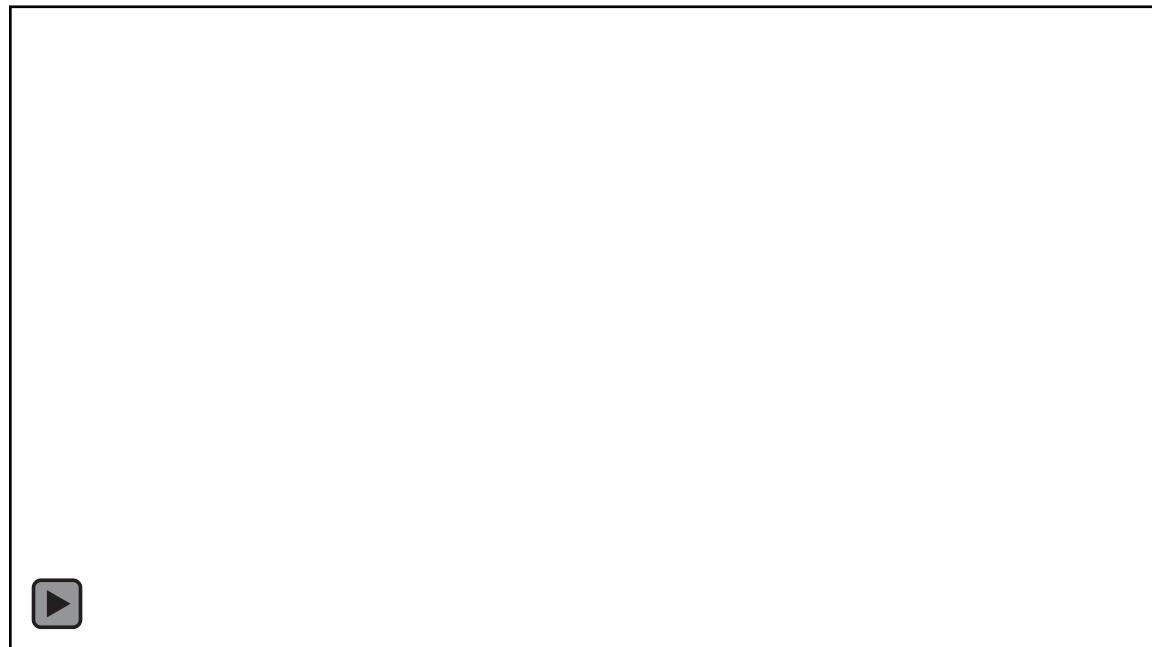
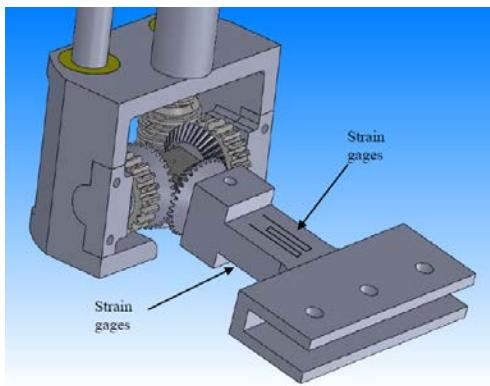
Actuation (output)

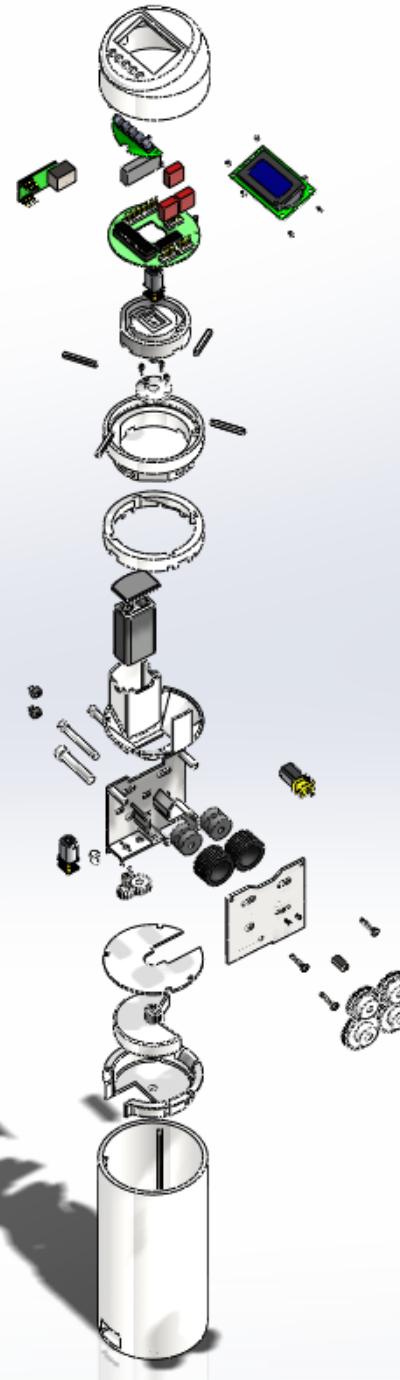
Processing (usually a microcontroller)

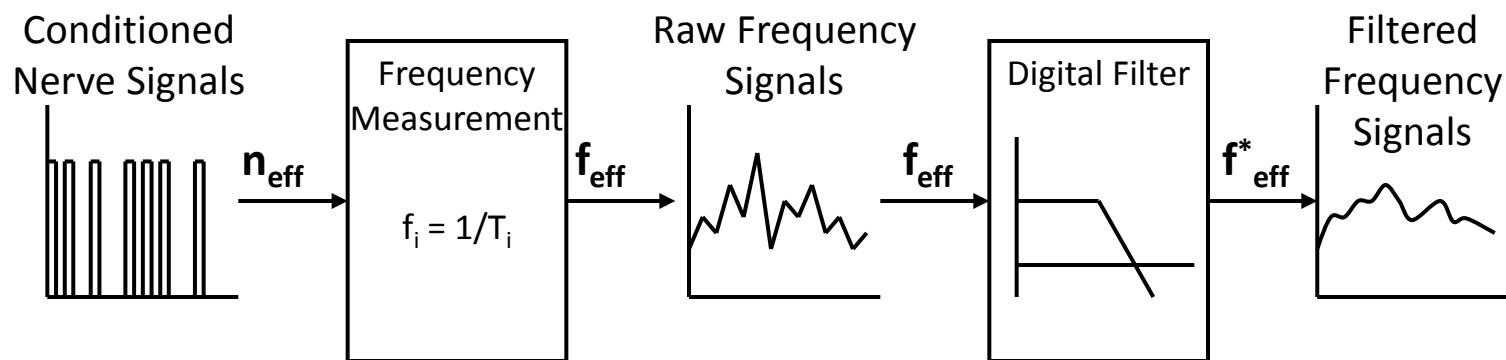
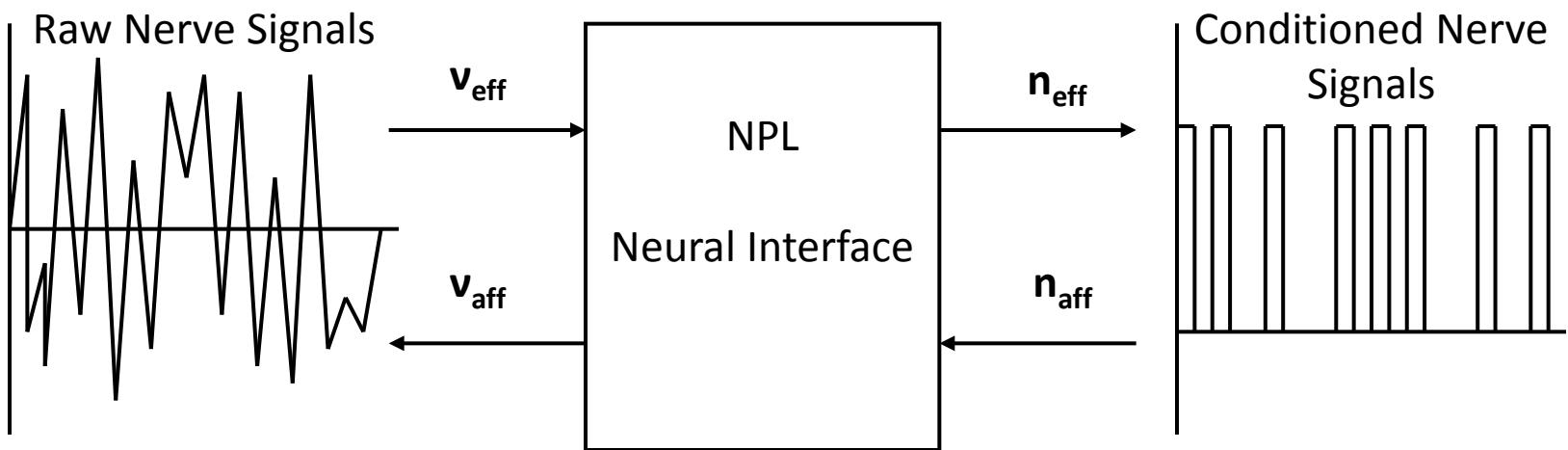




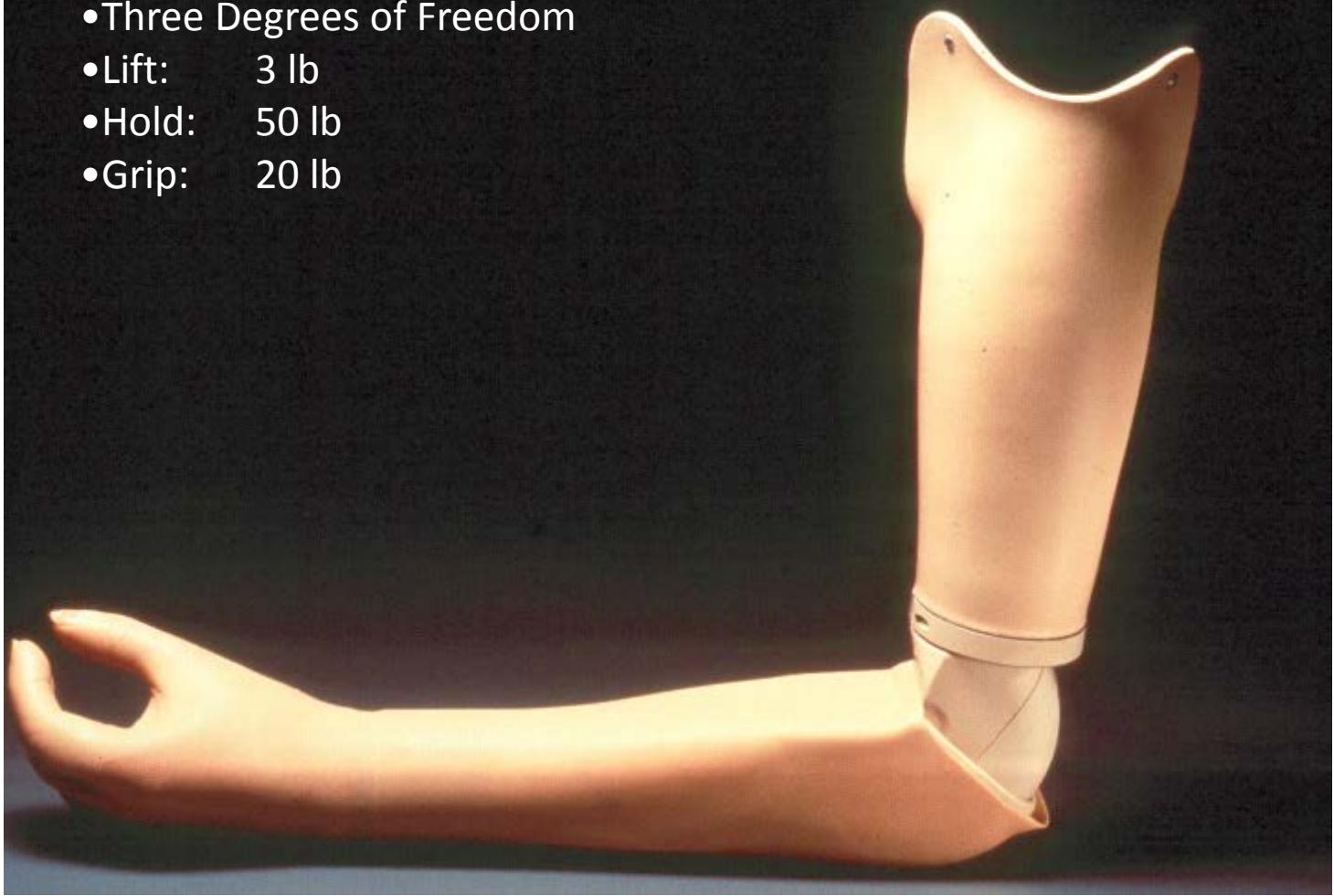






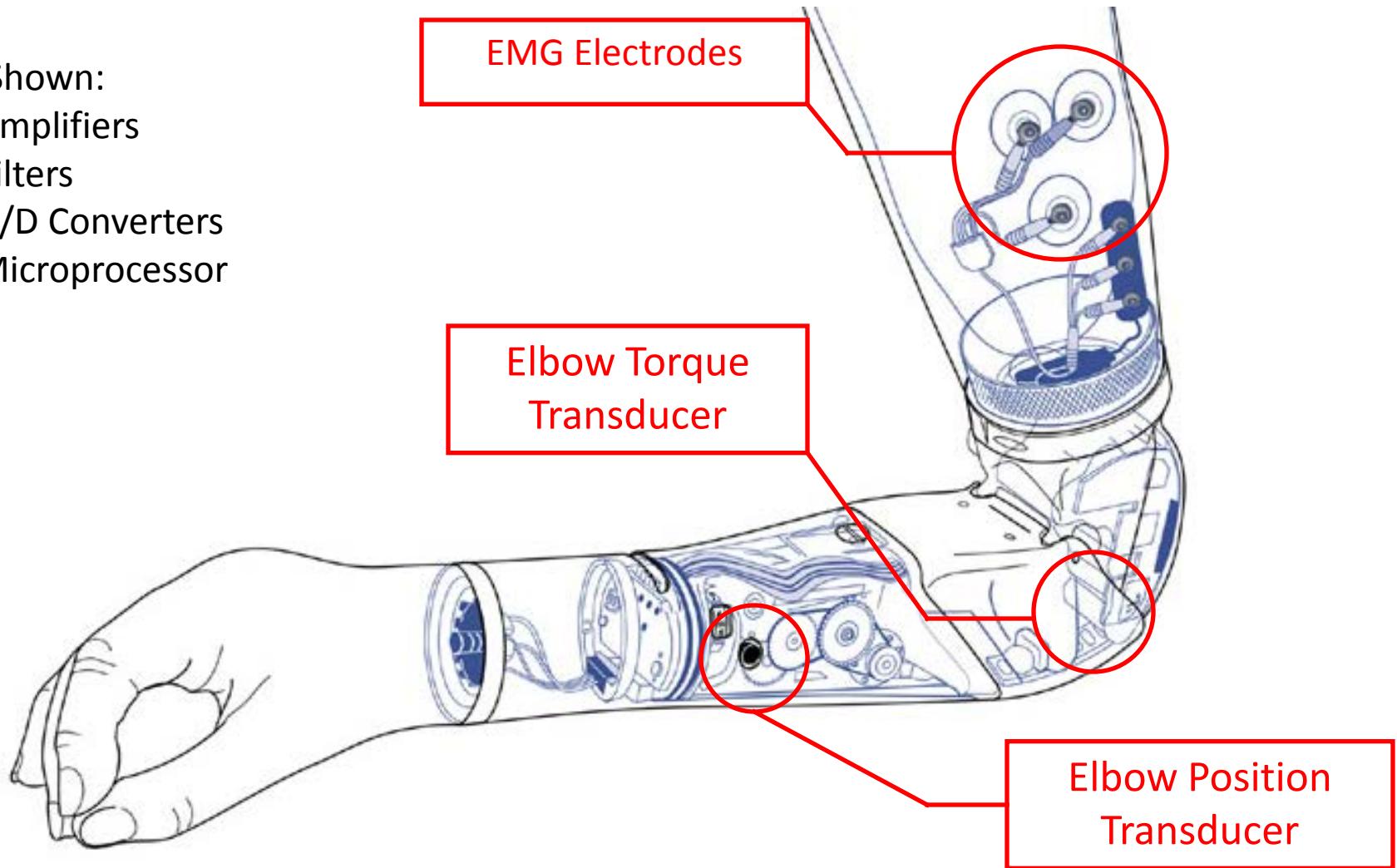


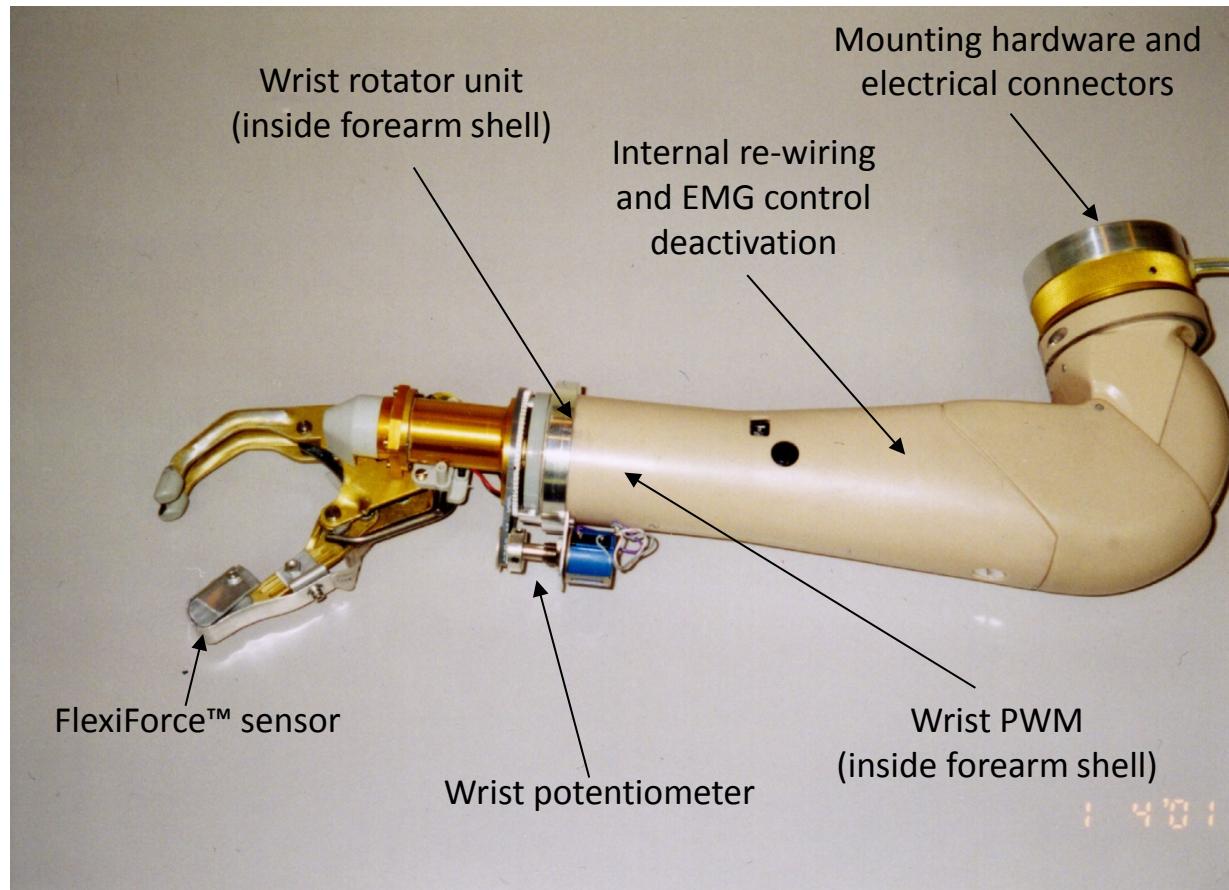
- Three Degrees of Freedom
- Lift: 3 lb
- Hold: 50 lb
- Grip: 20 lb

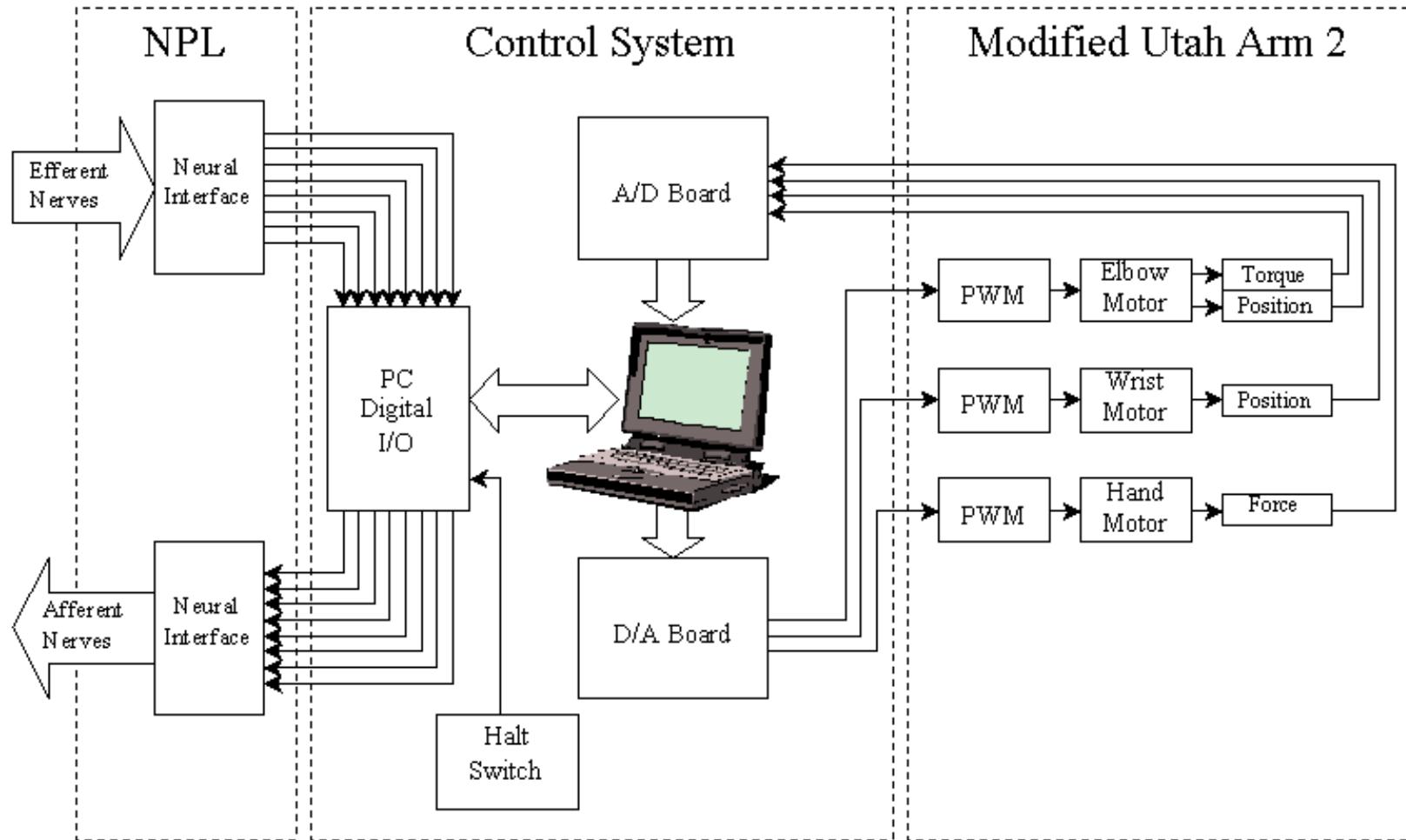


Not Shown:

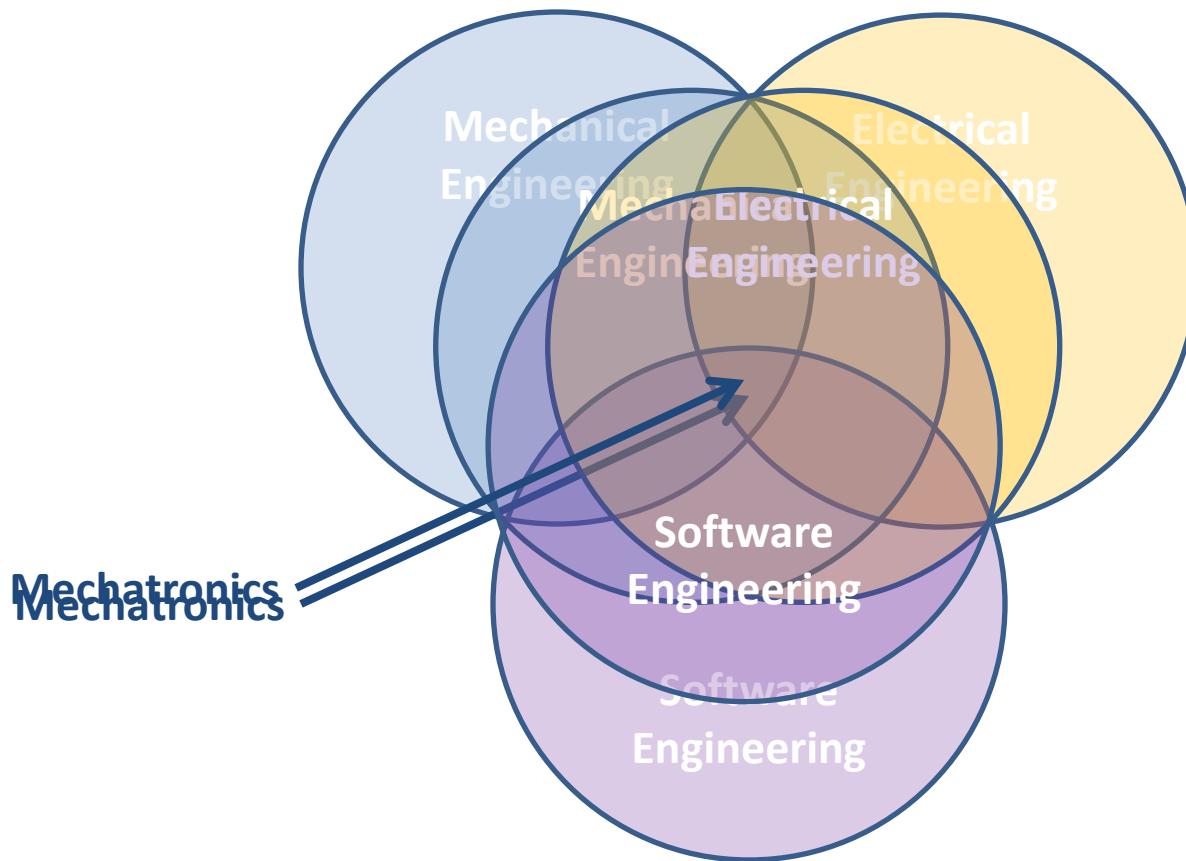
1. Amplifiers
2. Filters
3. A/D Converters
4. Microprocessor







What Is Mechatronics?



Mechatronics Course

Let's study and use...

Microcontroller programming and interfacing

Electrical circuits

Sensors

Actuators

Signal conditioning

PCB design

Mechanical prototyping