

Course Introduction

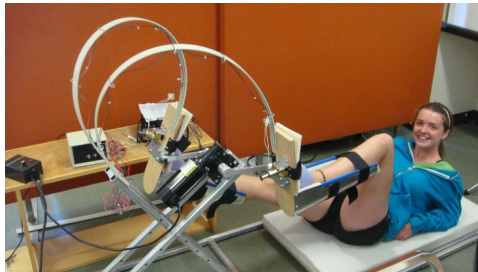
Engr325

Instrumentation

Dr Curtis Nelson

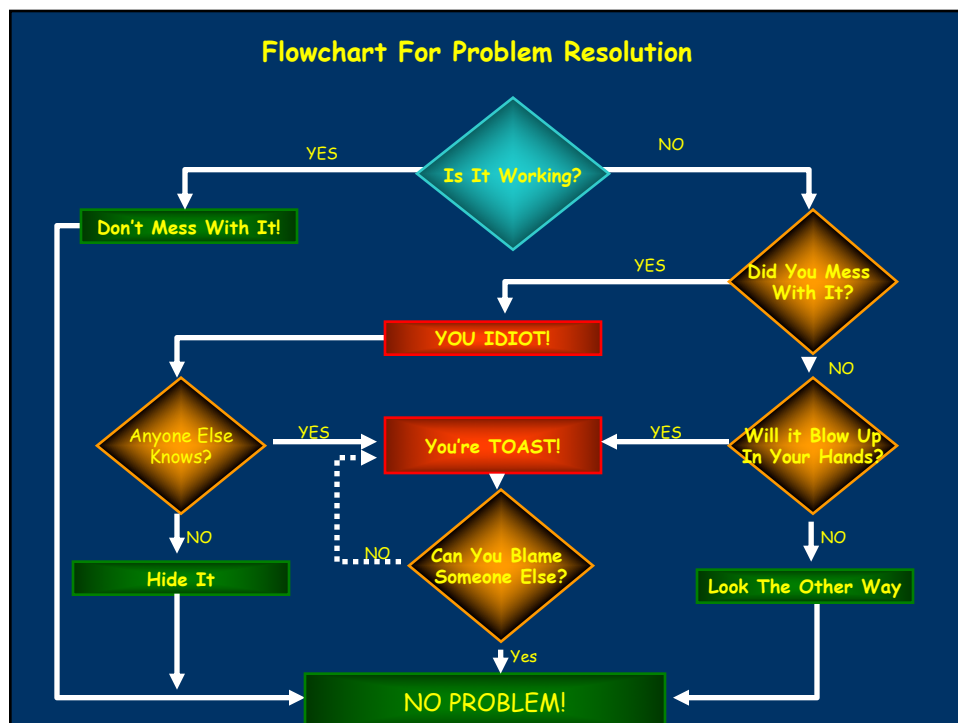
Course Introduction

- Class roster
- Lab sections
- Web page
 - Syllabus
 - Outline



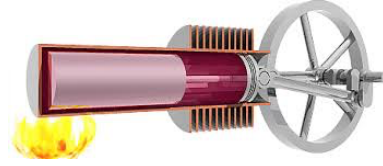
Problem Solving

- Instrumentation is about:
 - Identifying which signals you need to analyze
 - Determining the characteristics of those signals
 - Voltage, current, frequency, magnitude, phase, etc.
 - Determining how to acquire the signals
 - Analyzing the signals
 - Presenting results
 - Drawing conclusions
- In my experience, more engineering issues stem from improper problem definitions rather than improper problem solutions.



Instrumentation Examples

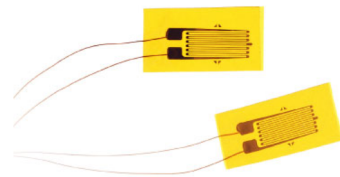
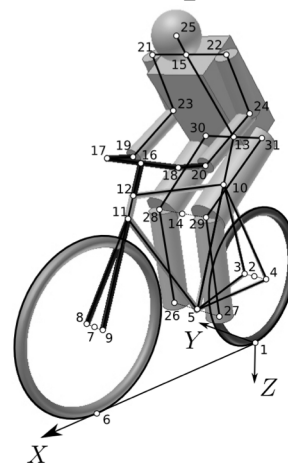
- Heart arrhythmias.
- Fluke meter design.
- Stirling cycle engines.



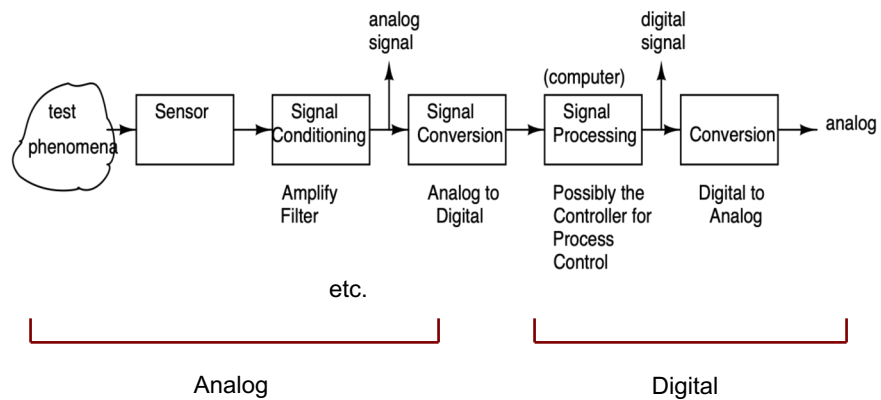
Civil Instrumentation Example



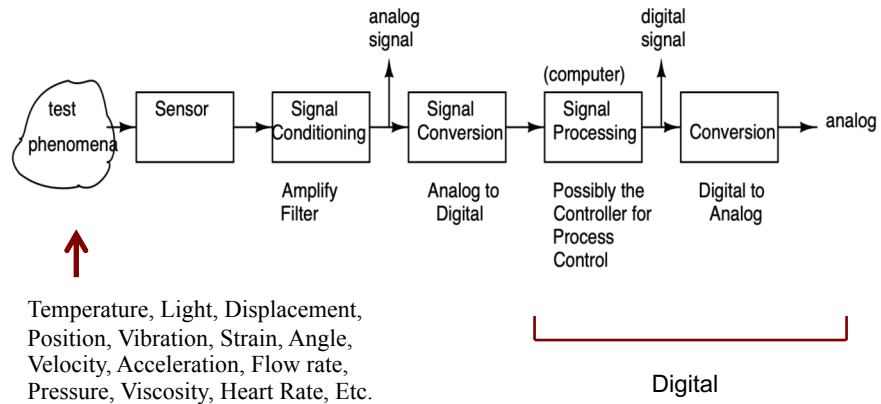
Mechanical Instrumentation Example



General Instrumentation System



General Instrumentation System



Temperature, Light, Displacement,
Position, Vibration, Strain, Angle,
Velocity, Acceleration, Flow rate,
Pressure, Viscosity, Heart Rate, Etc.

- What will we emphasize this quarter?