

Introduction to Mechatronics

Young W. Lim

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Mechatronics

Mechanism + Electronics

- the term invented by a Japanese engineer in 1969
- Integration
- Co-ordination
- Concurrent Development
- Mechanical Engineering
- Electronic Engineering
- Control Engineering
- Intelligent Computer Control

A Mechatronic System

- A complete integration
- A concurrent approach to the design
- An integrated, interdisciplinary approach
- at the earliest stages of a design process

A basic element

- Mechanical Systems
- Digital / Analog Sensors
- Digital / Analog Actuators
- Microprocessor Systems for control



Embedded Systems

- A system where microprocessors are embedded into
- microcontroller : microprocessors + memory + ADC / DAC

The design process

- ① The need
 - ② Analysis of the problem
 - ③ Preparation of specification
 - ④ Generation of possible solutions
 - ⑤ Selections of a suitable solutions
 - ⑥ Production of a detailed design
 - ⑦ Production of working drawings
- Virtual Reality Technology

Reference

[1] W. Bolton, "Mechatronics", 5th ed, Pearson