ME 592 - Mechatronics Systems

Hour: Lecture: 2 Hrs. Tutorial: 2 Hrs. Credit: 3.
Coordinator: Salem Haggag

Text Book:

- D. Shetty & R.A.Kolk " Mechatronics System design", PWS Publishing Company, Latest Edition.

Reference Books:

- M.B.Histand & D. G. Alciatore" Introduction to Mechatronics and Measurement Systems", McGraw-Hill, Latest Edition.

Specific course information

a. Introduction to mechatronics systems-measures of system performance. Computer control/ Discrete controllers I and II. Interfacing sensors and actuators to computer. Computer I/O cards software I and II data acquisition and control case studies. Robotics applications.
b. Prerequisite: ME 591
c. Designation: Required

Specific goals for the course:

- An ability to function on multidisciplinary teams.
- Understand global effects of practices, products, and events, and the impact of engineering solutions on society.
- Use techniques, skills and modern engineering tools necessary for engineering practice.
- To carry out feasibility analyses and optimization procedures in mechanical engineering projects.

Course instruction outcomes:

- The students will be able to Understand and analyze the Mechatronics systems,
- The students will be familiar with the key elements, techniques, control, and design process user for Mechatronics system design,
- The students will know the important components Data Acquisition Systems (DAS).

Student outcomes:

D, H, K

Topics Covered:

- Introduction to Mechatronics Systems
- Mechatronics of System Performance
- Computer Control

- Z-transform
- Discrete Controllers
- Interfacing Sensors and Actuators to Computer
- Real-Time Interfacing
- Computer I/O Cards and Software
- Data Acquisition and Control Case Studies
- Liquid Level Control
- Robotics Applications

Course / credit hours	Math & Basic Sciences	Engineering Topics	General Education
Mechatronics systems (ME592)/3		3	