



Faculty of Engineering – Assiut University
Bachelor Degree
Mechanical Engineering Department
Mechatronic Engineering Program
Course specification
Mechatronics (B) MT 423

1. Course Aim

	At the end of this course the student will be able to
Main Aim	Introduce basic concepts and theory of mechatronics System design.
Sub-Aims	<ul style="list-style-type: none">• Emphasizing the necessity of advanced mechatronics system design versus traditional system design.• Presenting case studies on design of mechatronic products.• Casting the minimum knowledge of intelligent sensors, actuators, intelligent products and intelligent devices.• Casting the minimum knowledge of Intelligent Controllers.• A gentle look inside the simulation.

2. Course Content

Introduction to Mechatronics Design - Mechatronics Design philosophy - Mechatronics Design Versus Traditional Design - Case study on Design of Mechatronic Products - A gentle look inside simulation - Examples of simple systems - Comparison of different software packages for simulation of multidisciplinary systems - Intelligent Sensors - Intelligent Product and Intelligent Devices - Intelligent Controller - Case Study on Mechatronics System

3. Course Topics

Topic	Subject	weeks
1 st topic	Introduction to Mechatronics Design	2
2 nd topic	A gentle look inside simulation	2
3 rd topic	Intelligent Sensors	2
4 th topic	Intelligent Product and Intelligent Devices	2
5 th topic	Intelligent Controller	2
6 th topic	Cases Study on Mechatronics Systems	4

4. Grades Distribution

Assesment Methods		Percentage	
Final Exam		40%	
Year work		25%	
Med term exam		35%	
Assessments	Written Exam	% 40	100%
	Oral Exam		
	Tutorial assessment	5%	
	Project assessment	30%	
	Model assessment		
	Report assessment		
	Quiz assessment		
	Presentation assessment	10%	
	Discussion	15%	
	Laboratory test		
	Home Exam		
Monitoring			
Total		% 100	

5. List of References**5.1- Reference Book:**

Mechatronics System Design notes, HEEPF grant (A-085-10)

5.2- Recommended Books:

Nitaigour Premchand Mahalik “ Mechatronics, principles, Concepts and Applications”, 2003