

Faculty of Engineering & Technology

Graduation Project II

Information :

Course Code : MKT 501

Level : Undergraduate

Course Hours : 4.00- Hours

Department : Specialization of Mechatronics Engineering

Instructor Information :

Title	Name	Office hours
Lecturer	Amr Mohamed Metwally Ismaiel	
Lecturer	Anas Mohamed Abdelrahman Ali	
Lecturer	SAMAH ELSAYED ELMETWALLY ELKHATIB	
Lecturer	MOHAMED ABDELBAR SHAMSELDIN ALY	1
Lecturer	Hassan Mohamed Shams Eldin Elsayed Eleashy	
Lecturer	Mohamed Fathy Abdel Rahman Badran	
Lecturer	Mohamed Ahmed Mahmoud Karali	
Lecturer	Mohamed Ali Mohamed Elsayed Torad	
Lecturer	Abdel Moneim Mohamed El Mahdi Ismail	
Assistant Lecturer	Moustafa Raafat Aziz Shousha	1
Assistant Lecturer	Zakaria Mostafa Abdo Salim Marouf	
Teaching Assistant	Osama Ahmed Ibrahim Mohamed Montaser	
Teaching Assistant	Mohamed Samir Ahmed Mohamed	
Teaching Assistant	Amira Khaled Hasan Mohamed Elkodama	

Area Of Study :

This course aims to:

- Enhance students skill in realization, testing, and finishing their mechatronics project designed in MKT500 course.
- Improve students ability to prepare and write technical reports to introduce and present their project achievements.
- Train students to prepare and give effective presentation for their technical work in different forms.

Description :

Capstone Design: Participating students continue the work on the topic selected in MKT 500. Students are required to present their findings at the end of the project in the form of a seminar as well as a written formal report. Capstone Projects are intended to be intensive, active learning projects, requiring significant effort in the planning and implementation, as well as preparation of a substantial final written work product. Students should utilize faculty resources and seek consultations from faculty expertise to get a clear answer about what the project will entail and how it will be implemented.

Course outcomes :

a. Knowledge and Understanding: :

1 -	a1. Describe basics of English technical language.
2 -	a2. Describe fundamentals of technical report writing considering one of the standard format.
3 -	a3. Identify the professional ethics and impacts of engineering solutions on society and environment
4 -	a4. Describe the contemporary engineering topics.
5 -	a5. Describe the principles of sustainable design and development

b. Intellectual Skills: :

1 -	b1. Select and appraise appropriate ICT tools to a variety of engineering problems
2 -	b2. Judge engineering decisions considering balanced costs, benefits, safety, quality, reliability, and environmental impact.
3 -	b3. Incorporate economic, societal, environmental dimensions and risk management in design.
4 -	b4. Create systematic and methodical approaches when dealing with new and advanced technology.
5 -	b6. Create solutions to mechatronics systems especially to manufacturing, maintenance and interfacing problems in a creative way, taking ac-count of industrial and commercial constraints
6 -	b5. Identify at an appropriate level the design, production, interfacing and software needs of different parts of Mechatronics systems.

c. Professional and Practical Skills: :

1 -	c4. Apply the principles of sustainable design and development for a Mechatronics project.
2 -	c3. Carry out specialized mechatronics engineering designs for a pro-cess, component or system
3 -	c2. Apply knowledge of mathematics, science, information technology, design, business context and engineering practice integrally to identify, formulate and solve engineering and field problems related to Mechatronics.
4 -	c1. Construct engineering graphics to visualize various engineering applications including computer aided drafting.

d. General and Transferable Skills: :

1 -	d5. Lead and motivate individuals
2 -	d4. Demonstrate efficient IT capabilities
3 -	d3. Communicate effectively
4 -	d2. Work in stressful environment and within constraints
5 -	d1. Collaborate effectively within multidisciplinary team

Course Topic And Contents :

Topic	No. of hours	Lecture	Tutorial / Practical
Project I Alternative solutions evaluation (Continuation of work of MKT 500)	4	0	4
Decision for a solution	4	0	4
Implementing the selected solution	8	0	8
Troubleshooting and modifications	8	0	8
Assembly and testing for device / system / process	8	0	8
Experimentation/ evaluation/ comparison	8	0	8

Course Topic And Contents :

Topic	No. of hours	Lecture	Tutorial / Practical
Report preparation	8	0	8
Preparation of presentation and poster design	8	0	8
Rehearsal on presentation skills	4	0	4

Teaching And Learning Methodologies :

Reports
Technical contribution and Participation
Oral Presentation
Discussion

Course Assessment :

Methods of assessment	Relative weight %	Week No	Assess What
1st mid term	10.00	6	
2nd mid term	10.00	11	
Final Exam	40.00	16	
Oral Exam	25.00	16	
Participation and presentations	15.00		

Course Notes :

Lecture notes on the course Moodle page, FUE website.

Recommended books :

1. Text Book:
MIT Guide for Science and Engineering Communication, Zimmerman and Paradise, MIT press. Second edition.
- 2- Recommended Readings:
Critical Thinking and Innovation
Mechatronics Handbook.