

## 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	SAMAH ELSAYED ELMETWALLY ELKHATIB	
Assistant Lecturer	Rana Mohamed Abdel Rahman Saleh	

#### Area Of Study :

- Build and test the mechatronics project designed in MKT500 course.
- Learn how to write technical report summarizing their results.
- Learn how to make presentation for technical work and make a poster.

#### 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 - Apply the mechatronics design approach and elements to the design of new project system
- 2 - Know different previous solutions to solve the project needs.

##### **b.Intellectual Skills: :**

- 1 - Select the proper actuators and sensors in the project
- 2 - Analyse the results of experiments based on evaluation metrics.

##### **c.Professional and Practical Skills: :**

- 1 - Ability to program computing device such as arduino, Raspberry Pi, or other computing device for mechatronics project.
- 2 - Prepare a technical presentation report for a given task.
- 3 - Prepare technical report and poster describing project details

##### **d.General and Transferable Skills: :**

- 1 - Work in stressful environment and within constraints of time and resources.

2 -	Work inside a team.
3 -	Search for information and engage in life-long self-learning discipline.

### **Course Topic And Contents :**

<b>Topic</b>	<b>No. of hours</b>	<b>Lecture</b>	<b>Tutorial / Practical</b>
Alternative solution evaluation	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
Communication skill fundamentals ( 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 :**

<b>Methods of assessment</b>	<b>Relative weight %</b>	<b>Week No</b>	<b>Assess What</b>
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.

