EASTERN MEDITERRANEAN UNIVERSITY
COURSE OUTLINE

COURSE CODE	EENG225
COURSE TITLE	Fundamentals of Electrical & Electronic Engineering
CREDIT VALUE	**3**
DURATION OF COURSE	One semester

WEB LINK	http://opencourses.emu.edu.tr/course/view.php?id=569			
	Name	**e-mail**	**Office**	**Telephone**
Instructors	Prof. Dr. Osman KÜKRER	osman.kukrer@emu.edu.tr	EE205	1304
	Muhammad SOHAIL	muhammad.sohail@emu.edu.tr	EE214	1656

CATALOGUE DESCRIPTION

- **DC Circuits:**
  - System of units, Charge, Current, Voltage, Power, Energy, Basic Laws of DC Circuits, Series and parallel connection, Methods of analysis of DC circuits, Circuit Theorems, Capacitors & Inductors, First order & Second order circuits,
- **AC Circuits:**
  - Sinusoids, Phasors, Impedance, Admittance, and AC power analysis.
- **Magnetically Coupled Circuits:**
  - Magnetic Field, Mutual Inductance, Energy in Coupled Circuits, Transformers.

AIMS & OBJECTIVES

To familiarise students with fundamental theories and ideas of Electrical & Electronic Engineering which are applicable in all fields of Engineering.

LEARNING TEACHING METHODS

Lectures, supported by tutorial sections.

QUIZZES AND HOMEWORK

There will be a total of 2 quizzes and 1 homework.

METHOD OF ASSESSMENT

Midterm Examination	**30%**
Quizzes	**20%**
Homework	**10%**
Final Examination	**40%**

ATTENDANCE

Students who fail to attend the lectures regularly will be given the **NG** grade. A minimum of 75% attendance is mandatory.

TEXTBOOK/S

Alexander and Charles K, Fundamentals of Electric Circuits, Fifth Edition, Mc-Graw Hill Inc., New York, 2013.

RECOMMENDED READING

1. G. Rizzono , Principles and Applications of Electrical Engineering, Fifth Edition, Mc-Graw Hill Inc., New York, 2010

2. James W. Nilsona and Susan Riedel, Electric Circuits, Ninth Edition, Pearson Education Inc., New Jersey, 2011.

COURSE CONTENT AND SCHEDULE

WEEK	CHAPTER	TOPICS
1	1	**Course Registration Period** Course objectives, course description, **Introduction to DC Circuits** -System of units -Charge and Current -Voltage -Power and Energy -Circuit elements.
2-3	2	**Basic Laws:** -Ohm's Law - Nodes, branches & loops -Kirchoff's Laws -Series and parallel resistors -Current & voltage division -Wye-Delta Transformations -Delta-Wye Transformations
3-4	3	**Methods of Analysis:** -Nodal Analaysis -Nodal Analysis with voltage source -Mesh Analaysis -Mesh Analysis with current source
5-6	4	**Circuit Theorems:** -Linearity & Superposition -Source transformation -Thevenin's Theorem -Norton's Theorem
6-7	6	**Capacitors & Inductors:** -Capacitors -Series & Parallel Capacitors -Inductors -Series & Parallel Inductors
7-8	7	**First Order Circuits:** - First order cicruits -The source free RC circuits - The source free RL circuits

8-9		MID TERM EXAMINATIONS
10-11	8	**Second Order Circuits:** - Second order cicruits -The source free series RLC circuits -The source free parallel RLC circuits
12-13	9	**AC Circuits:** -Sinusoids -Phasors -Phasors relationships for circuit elements -Impedance & Admittance -Impedance Combinations
13-14	11	**AC Power Analysis:** -Instantaneous & Average Power -Maximum Avergae Power Transfer -Effective or RMS value -Apparent Power & Power Factor -Complex Power
14-15	13	**Magnetically Coupled Circuits:** -Magnetic Circuits -Magnetic Field -Magnetic Flux -Energy conversion devices -Flux linkage -Inductance & Energy -Ideal Transformers
15-17		FINAL EXAMS

ACADEMIC HONESTY - PLAGIARISM

Cheating is copying from others or providing information, written or oral, to others. Plagiarism is copying without acknowledgement from other people's work. According to university by laws cheating and plagiarism are serious offences punishable with disciplinary action ranging from simple failure from the exam or project, to more serious action (letter of official warning suspension from the university for up to one semester). Disciplinary action is written in student records and may appear in student transcripts.