MUTAH UNIVERSITY
Faculty of Engineering
Department of Electrical Engineering

Course Syllabus

Course Code	Course Name	Credits	Contact Hours
0401219	Electric Circuits & Filters Lab.	1	3 T

INSTRUCTOR/COORDINATOR	
Name	Dr. Khalid G Samarah Al Zoubi
Email	kgsamarah@mutah.edu.jo kgsamarah@gmail.com
Office Hours	1400:1600 (Sun, Tue)

TEXTBOOK	
Title	Laboratory Manual for Electric Circuits and Filters Laboratory
Author/Year/Edition	
Other Supplemental Materials	
Title	Fundamentals of Electric Circuits
Author/Year/Edition	Charles K. Alexander, Matthew N.O. Sadiku, McGraw Hill/2012/ 5th Ed

SPECIFIC COURSE INFORMATION
A. Brief Description of the Content of the Course (Catalog Description)
This course is designed to provide students with professional skills for lab experience, introduces the theory and principles for *DC* and *AC* circuit analysis. Topics include electric circuit laws, circuit theorems, *RC*, *RL*, and *RLC* circuit and sinusoidal steady-state analysis, Multimeters, Oscilloscope, Power supplies, Function generators and simulation software (Multisim) are used to collect data and describe circuit behavior.
B. Pre-requisites (P) or Co-requisites (C)
Electric Circuits (2) (0401212**) (C)**
C. Course Type (Required or Elective)
Required

SPECIFIC GOALS

A. Course Learning Outcomes (CLOs)

By the end of this course, the student should be able to:

CLO1: Operate basic electrical measurement equipment including oscilloscope, Multimeters, function generators and power supplies [6].

CLO2: Measure resistance, *DC* and *AC* voltage, current and power, and experimentally verify the result for a variety of electrical circuits [6].

CLO3: Analyze circuits using a simulation program (Multisim) to predict or describe circuit behavior [6].

CLO4: Work effectively in groups by sharing responsibilities and collaborating on findings [5].

B. Student Learning Outcomes (SOs) Addressed by the Course

1	2	3	4	5	6	7
				✓	✓	

BRIEF LIST OF TOPICS TO BE COVERED

List of Topics	No. of Weeks	Contact Hours
Experiment 1: Resistance and Ohm's Law	1	2
Experiment 2: Kirchhoff's Laws	1	2
Experiment 3: Superposition Theorem	1	2
Experiment 4: Thevenin's Theorem and Max Power Transfer	2	4
Experiment 5: Oscilloscope	3	6
Experiment 6: *DC* Response of *RC* and *RL* Circuits	2	4
Experiment 7: *RC*, *RL*, *RLC* circuits and resonant	2	4
Experiment 8: Impedance and *AC* Circuit	1	2
Experiment 9: Low Pass Filter	1	2
Total	*14*	*28*

EVALUATION

Assessment Tool	Due Date	Weight (%)
Mid Exam	According to the university calendar	20
Lab Reports	One week after being taken	40
Final Exam	According to the university calendar	40

ABET's Students Learning Outcomes (Criterion # 3)		
	Relationship to program outcomes	
ABET 1-7		**Engineering Student Outcomes**
1		an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
2		an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.
3		an ability to communicate effectively with a range of audiences.
4		an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.
5	√	an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.
6	√	an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.
7		an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.