MUTAH UNIVERSITY
Faculty of Engineering
Department of Electrical Engineering

Course Syllabus

Course Code	Course Name	Credits	Contact Hours
0401479	Electric Machines Lab	1	2T

INSTRUCTOR/COORDINATOR	
Name	Dr. Talal Aljaafreh
Email	tmjaafreh@mutah.edu.jo
Office Hours	12:00-1:00 (Tues)

TEXTBOOK	
Title	Laboratory Manual for Electrical Machines
Author/Year/Edition	
Other Supplemental Materials	
Title	Electric Machinery Fundamentals
Author/Year/Edition	S. J. Chapman, McGraw Hill/2012/ 5th Ed

SPECIFIC COURSE INFORMATION
A. Brief Description of the Content of the Course (Catalog Description)
Experiments in single and three phase transformers, DC generators and motors, three phase synchronous machines, three phase induction machines, single phase and special machines.
B. Pre-requisites (P) or Co-requisites (C)
Electric Circuits & Filters lab (0401219) **(P)** Electric Machines (2) **(**0401376**) (P)**
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: To get familiar with DC machines, Transformers, synchronous machines and induction motors and give them experimental skills [6].
CLO2: To apply experimentally the basic principles of operation of rotating electric machines and finding efficiency and performance characteristics [6].
CLO3: To Work effectively in groups (teamwork) by sharing discuss and analyze the results [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
Introduction to the lab	1	2
Experiment 1: Elementary generator	1	2
Experiment2: DC series motor	1	2
Experiment3: DC shunt generator	1	2
Experiment4: Single phase transformer	1	2
Experiment5: Three phase transformer	1	2
Experiment6: Three phase synchronous generator	2	2
Experiment7: Three phase synchronous motor	1	2
Midterm Exam	1	2
Experiment8: Three phase induction motor	1	2
Experiment9: Single phase induction motor	1	2
Experiment10**:** Universal motor	1	2
Free lab	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 outcome	
ABET 1-7		
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.