The University of Jordan
School of Engineering

Department	Course Name	Course Number	Semester
Aircraft maintenance Engineering	Licensing Module 3: Electrical Fundamentals	0994151	Fall

2025 Course Catalog Description

Electron theory, Static electricity and conduction, Electrical terminology, Generation of electricity, DC sources of electricity, DC circuits, Resistance/ resistor power, Capacitance/ capacitor magnetism, Inductance/ inductor, DC motor/ generator theory, AC theory, Resistive (R), Capacitive (C) and Inductive (L) circuits transformers filters, AC generators, AC motors.

Instructors

Name	E-mail	Sec	Office Hours		Lecture Time	
			Sunday	Tuesday		
MEng. Aasef Hamadneh	ahamadneh@joramco.com.jo		1:00-2:00	1:00-2:00		

Text Books

Title	Electrical Fundamentals	
Author(s)	EASA	
Publisher, Year, Edition	Issue 2 , 2024	

References

Books	
Journals	
Internet links	

Prerequisites

Prerequisites by topic	-
Prerequisites by course	-
Co-requisites by course	-
Prerequisite for	-

Topics Covered

Week	Topics	Chapter in Text
1	Electron theory,	Chapter 1
2	Static electricity and conduction,	Chapter 2
3-4	Electrical terminology, Generation of electricity,	Chapter 3,4
5-6	DC sources of electricity, DC circuits, Resistance/ resistor power, Capacitance/ capacitor magnetism,	Chapter 5,6,7,8,9,10
6-7	Inductance/ inductor,	Chapter 11
7-8	DC motor/ generator theory,	Chapter 12,13
9-10	AC theory,	Chapter 14
11-14	Resistive (R), Capacitive (C) and Inductive (L) circuits	Chapter 15
14-15	transformers filters, AC generators, AC motors	Chapter 16,17,18

Mapping of Course Outcomes to ABET Student Outcomes

SOs	Course Outcomes
2	Where applicable, the student will also be able to read, understand and use sketches, drawings, schematics and practical demonstration to describe the subjects.
4	At the satisfactory completion of this Module the student will be able to give the required description of the electrical fundamentals as appropriate, typical examples and mathematical formulae in conjunction with physical laws.

Evaluation

Assessment Tools	Expected Due Date	Weight
Projects		20%
Midterm Exam		30%
Final Exam		50%

Contribution of Course to Meet the Professional Components

Relationship to Student Outcomes

SOs	1	2	3	4	5	6	7
Availability		**X**		**X**			

Relationship to Aeronautical Engineering Program Objectives (AEPOs)

AEPO1	AEPO2	AEPO3	AEPO4	AEPO5

ABET Student Outcomes (SOs)

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

Updated by Curriculum Committee, 2025