



The Hashemite University

Faculty of Engineering

Course Syllabus

Course Title:	Electrical Machines	Course Number:	110405323
Department:	Department of Mechatronics	Designation:	Compulsory
Prerequisite(s):	110409203		
Instructor:	Dr. Mohammad Salah	Instructor's Office:	E3130
Instructor's e-mail:	msalah@hu.edu.jo , www.msalah.com		
Office Hours:	All the time via MS Teams or Facebook messenger (Dr-Mohammad Salah)		
Time:	10:00 – 11:00 (Sun + Tue + Thu)	Class Room:	H.B.211
Course description:	This course introduces the basic principles of electrical machines and energy conversion. Principles and operation of Single and three phase transformers are also introduced. The principles, operation, key characteristics, and application of DC and three-phase AC motors are presented.		
Textbook(s):	Stephen Chapman: "Electric Machinery Fundamentals", 5th edition, McGraw Hill, 2012.		
Other required material:	<ol style="list-style-type: none">1. George Mcpherson, "An Introduction to Electrical Machines and Transformers," Wiley: New York, 1981/1990.2. Charles Hubert, "Electric Machines: Theory, Operation, Applications, Adjustment, and Control," Pearson Education: Delhi, 2nd Ed, 2002.3. Smarajit Ghosh, "Electric Machines," Pearson Education: Delhi, 2005.4. Sayed Naser, "Handbook of Electrical Machines," McGraw-Hill: New York, 1987.5. Sayed Naser, "Electrical Machines and Electromechanics," Schaum's outline series , 2nd Ed, 1998.		
Course objectives:	<i>The student shall be able to:</i> <ol style="list-style-type: none">1. Obtain mathematical models, estimate, and analyze the performance characteristics of transformers and motors2. Identify the best electrical motor for the desired application3. Comprehend the impact of state-of-the-art electric machines in solving industrial problems		
Topics covered:	<ol style="list-style-type: none">1. Introduction to Machinery Principles (Chapter 1)2. DC Machinery Fundamentals (Chapter 7)3. DC Motors and Generators (Chapter 8)4. Transformers (Chapter 2)5. AC Machinery Fundamentals (Chapter 3)6. Induction Motors (Chapter 6)7. Synchronous Motors (Chapter 5) – Briefly (NFE)8. Single-Phase and Special-Purpose Motors (Chapter 9) – Briefly (NFE)		
Class/laboratory schedule:	3 class sessions each week; 50 minutes each		
Grading Plan:	Midterm Exam (50 Points)	Sun 15/11/2020 (10:00 – 11:00)	
	Final Exam (50 Points)	To be announced by the registrar	
General Notes:	Attendance is mandatory and absence is allowed up to total 7 lectures		
Prepared by:	Dr. Mohammad Salah	Date:	11/10/2020