



The Hashemite University
Faculty of Engineering, Mechatronics Engineering
Fundamentals of Electric and hybrid vehicles Course Syllabus

Course Title:	Fundamentals of hybrid vehicles	Course Number:	110405548
Department:	Mechatronics Engineering	Designation:	Elective
Prerequisite(s):	110405323 + 110406329		
Instructor:	Dr. Mohammed Abu mallouh	Instructor's Office:	E3029
Instructor's e-mail:	mmallouh@hu.edu.jo		
Office Hours:	Sunday @ 3:00-5:00 pm Also other time can be arranged		
Time:	8:00-9:00 Sunday+ Tuesday+ Thursday	Class Room:	MS teams
Textbook(s):	<ul style="list-style-type: none"> • Iqbal Husain (2010), Electric and Hybrid Vehicles: Design Fundamentals, Second Edition, CRC Press • Amir Khajepour, M. Saber Fallah, Avesta Goodarzi (2014), Electric and Hybrid Vehicles: Technologies, Modeling and Control - A Mechatronic Approach, Wiley. 		
Other required material:	Mehrdad Ehsani, Yimin Gao, Ali Emadi (2009), Modern Electric, Hybrid Electric, and Fuel Cell Vehicles: Fundamentals, Theory, and Design, Second Edition, CRC Press		
Topics covered:	Ch1 Introduction to Alternative Vehicles Ch2 Internal combustion engine Vehicle Ch3 Vehicle Mechanics Ch4 Alternative Vehicle Architectures Ch5 Battery Energy Storage Ch6 Alternative Energy Storage		
Grading Plan:	Midterm	(40 Points)	25/4/2021, Sunday
	(Project/HW/Quizzes)	(20 points)	TBD
	Final Exam	(40 Points)	TBD

Major Topics Covered and Schedule in Weeks:

Topic	# Weeks	# hours
1. Ch1 Introduction to Alternative Vehicles	1	3
2. Ch2 Internal combustion engine Vehicle	2,3,4	9
3. Ch3 Vehicle Mechanics	5,6,7	9
4. Ch4 Alternative Vehicle Architectures	8,9,10	9
5. Ch5 Battery Energy Storage	11,12,13	9
6. Ch6 Alternative Energy Storage	14,15,16	9
Total		48

Course Policy

Attendance is mandatory and absence is allowed up to 15% lectures

Prepared by:	Dr. Mohammed Abu mallouh	Date:	20/2/2021
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