

نموذج المحتوى التدريبي		
نموذج نظام الإدارة المتكامل	رقم الإصدار: 3/1	الصفحة: 4/1

Electronics and Power Electronics		العنوان باللغة الإنجليزية:		العنوان باللغة العربية:	
		الالكترونيات والكترونييات الطاقة			
		(15) ساعة تدريبية		عدد الساعات التدريبية:	
		قاعات الاكاديمية		قاعة / مختبر:	
(250) دينار.		لأعضاء الغرفة		الرسوم المقررة:	
		(213) دينار.		لغير الأعضاء	
				خصم المجموعات:	
اليوم		التاريخ		عدد الساعات	
الأحد		2025/10/19		3 ساعات	
الاثنين		2025/10/20		3 ساعات	
الثلاثاء		2025/10/21		3 ساعات	
الاربعاء		2025/10/22		3 ساعات	
الخميس		2025/10/23		3 ساعات	
By the end of this course, the trainees will be able to:					
<ul style="list-style-type: none">○ Explain the use of semiconductor devices in power electronic converter circuits.○ Analyze, experiment, and simulate semiconductor electronics circuits.○ Explain and analyze the operation of DC-DC chopper circuits.○ Explain the operation of uncontrolled and phase-controlled single-phase and three-phase rectifier circuits.○ Explain and analyze the operation of the DC-AC inverters.○ Analyze the operation of the AC voltage regulators.○ Practically apply electronics and power electronics circuits in the laboratory.○ Simulate power electronics circuits using computer aided design software.					
الأهداف:					
During this course, the student will learn about the following topics:					
<ul style="list-style-type: none">➤ Semiconductor materials and devices.<ul style="list-style-type: none">- Semi-conductor materials.					
المحتويات:					

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<ul style="list-style-type: none"> - Conduction of P-N junction diodes. - Forward and reverse biasing for P-N junctions. <p>➤ Application of Semi-conductor diodes</p> <ul style="list-style-type: none"> - Rectification principle using diodes and Zener diodes. - Identify the SCR way of conduction. - LED, SCR, and Varactor Diodes. - Practical lab experiments on diode circuits. <p>➤ BJT and FET transistors.</p> <ul style="list-style-type: none"> - BJT Transistor Action. - BJT Transistor configuration & biasing. - BJT Transistor characteristics and parameters. - Transistor amplifiers. - Common emitter amplifiers. - Common base amplifiers. - Common collector amplifiers. - Class A and B amplifiers. - FET Transistor characteristics. - JFET input & output characteristics. - Practical lab experiments on transistor circuits. <p>➤ Introduction to Power Electronics</p> <ul style="list-style-type: none"> - Definition of power electronic. - Switching characteristic. - List of power electronics semi-conductor devices. - Power electronics applications. <p>➤ DC-DC Choppers</p> <ul style="list-style-type: none"> - Step down chopper. - Chopper with resistive load. - Chopper with inductive load. - PSIM Simulations. 		
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<p>➤ Rectifiers</p> <ul style="list-style-type: none"> - Single phase half -wave controlled rectifier. - Single phase full-wave controlled rectifier. - Three phase half-wave-controlled converter. - Three phase full-wave controlled converter. - PSIM Simulations. <p>➤ DC-AC Inverters</p> <ul style="list-style-type: none"> - Introduction. - Half-bridge inverter with resistive load. - Three phase bridge inverters. - Three phase bridge inverters. - Inverter harmonics. - Sinusoidal pulse-width modulation. - PSIM Simulations. <p>➤ AC-AC Converters</p> <ul style="list-style-type: none"> - Traic phase controller. - Analysis of regulator. - The series universal motor controlling circuit. - PSIM Simulations. <p>➤ Power Electronic Switches</p> <ul style="list-style-type: none"> - Thyristor construction, modes of operation. - Classification of power switching device. - Advantages and the disadvantages of thyristor power control. - Applications of thyristor power controller. - Power MOSFET. - Characteristics of IGBTs. - PSIM Simulations. 		
<p>Marine Electrical Engineer Marine Engineers Electrical Supervisors Electrical Engineers</p>		المشاركون:

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Electrical Technicians Mechatronics Engineers	
	لغة التدريب: اللغة العربية - اللغة الانجليزية
	عدد المتدربين: