

١ - بيانات المقرر		
المستوى: الأول	أسم المقرر: Electric Circuits	الرمز الكودي: Phys 103
٢: عملي	عدد الوحدات الدراسية: ٣ ساعة معتمدة نظري ٢: تمارين: ١ عملي: ٢	التخصص: إحصاء وعلوم الحاسب

<p>For students undertaking this course, the aims are to:</p> <p>1-Study the principle connection of coil and capacitance with electric source. 2- Outline of the basic information of impedance and inductance. 3- Develop a clear understanding of the basic concepts of electric circuits. 4- Explain the applications of the electric circuits.</p>	٢- هدف المقرر:
٣- المستهدف من التدريس المقرر:	
<p>a- Knowledge and Understanding :</p> <p>On completing this course, students will be able to:</p> <p>a1 - Define the basic circuit components. a2- Explain the principle of electric circuits. a3- Understand the phase diagram of electric circuits.</p>	أ- المعلومات والمفاهيم:
<p>b- Intellectual Skills:</p> <p>On completing this course, students will be able to:</p> <p>b1 - Know more information about circuit parameters, Average and effective values b2 - Sketch graphically complex impedance and phase notation. b3 - Analyze electric circuits. b4 - Explain the principle of Mech current network analysis Node voltage Network analysis</p>	ب- المهارات الذهنية
<p>c-Professional and Practical Skills:</p> <p>On completing this course, students will be able to:</p> <p>c1 - Perform an experiment for some electric circuits. c2- Use mathematical formula in solving challenging problems related to electric circuits. c3 -Design a diagram graphically for electric circuits .</p>	ج- المهارات المهنية الخاصة بالمقرر:
<p>d-General and Transferable Skills:</p> <p>On completing this course, students will be able to:</p> <p>d1- Collect information's about subject. d2- Collect and analyze the database of information related to different subjects. d3- Solve problems.</p>	د- المهارات العامة :
<ul style="list-style-type: none"> - Definitions and circuit parameters, Average and effective values - Sinusoidal current and voltage - Complex impedance and phase notation, Series and parallel Circuits - Power and power factor correction, series - Mech current network analysis - Node voltage Network analysis - Mutual inductance - Fourier Method of waveform analysis 	٤- محتوى المقرر:
<p>5-Teaching and Learning Methods</p> <ul style="list-style-type: none"> • Lectures using overhead projector and board. • Discussion sessions • Problem classes and group tutorial. 	٥- اساليب التعليم والتعلم:

<ul style="list-style-type: none"> • Class activity. • Laboratory work 			
The same as normal students, only skeletal disabilities are allowed in the Faculty of Science.			٦- أساليب التعليم والتعلم للطلاب ذوي القدرات المحدودة:
			٧- تقويم الطلاب :
Final exam	to assess	a1-a3, b1-b4,c1,d3	أ- الأساليب المستخدمة :
Oral exam	to assess	a1-a3, b1 ,b3	
Practical exam	to assess	a1-a3,d1,c1,c3	
Mid-Term Exam	to assess	a1-a3, b1-b4,c1,d3	
Final exam	Week #	16	ب- التوقيت :
Oral exam	Week #	16	
Practical exam	Week #	15	
Mid-Term Exam	Week #	8	
Final-Term Examination		60%	ج- توزيع الدرجات :
Oral Examination		10 %	
Practical Examination		20%	
Semester work		10%	
Total		100%	
			٨- قائمة الكتب الدراسية والمراجع :
– Notes offered by the physics department			أ- مذكرات:
			ب- كتب ملزمة
-Raymond A. Serway ,Physics for Scientists and Engineers ,John W. Jewett 6th Edition, 2004. -Hallidy, Resnick and Krane ,Physics, Sixth edition, John Wiley & Sons, 2003.			ج- كتب مقترحة :
http://en.wikipedia.org			د- دوريات علمية أو نشرات..

(أ) مصفوفة المعارف والمهارات المستهدفة من المقرر الدراسي

المحتويات للمقرر	أسبوع الدراسة	المعارف الرئيسية	مهارات ذهنية	مهارات مهنية	مهارات عامة
Definitions and circuit parameters, Average and effective values	1-2	a1-a3	b1	c1	d1
Sinusoidal current and voltage	3-4	a1-a3	b1	c1	
Complex impedance and phase notation, Series and parallel Circuits	5-6	a1-a3	b1	c1,c2	d3
Power and power factor correction, series	7-8	a3	b2		d2
Mech current network analysis	9-10	a3	b2	c1-c3	d2-d3
Node voltage Network analysis	11-12	a3	b3		d2-d3
Mutual inductance	13-14	a3	b4		d3
Fourier Method of waveform analysis	15	a3	b4	c3	d2-d3

أستاذ المادة: د. / عزيزة عطا عبد العزيز

رئيس مجلس القسم العلمي : أ.د./ المتولى محمود عبد الرازق