: المنصورة

كـــلية: العلـــــوم

قـــســـم: الفيزيـــاء

١- بيانات المقرر		
الرمز الكودى :Phys 103	**أسم المقرر: Electric Circuits**	**المستوى: الأول**
التخصص: رياضيات	**عدد الوحدات الدراسية: ٣ ساعة معتمدة نظرى ٢: تمارين: ١ عملى: ٢**	

For students undertaking this course, the aims are to: 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.	**٢- هدف المقرر:**
٣- المستهدف من التدريس المقرر:	
a- Knowledge and Understanding : **On completing this course, students will be able to:** a1 - Define the basic circuit components. a2- Explain the principle of electric circuits. a3- Understand the phase diagram of electric circuits.	**أ- المعلومات والمفاهيم:**
b- Intellectual Skills: **On completing this course, students will be able to:** 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	**ب- المهارات الذهنية**
c-Professional and Practical Skills: **On completing this course, students will be able to:** c1 - Perform an experiment for some electric circuits. c2- Use mathematical formula in solving challenging problems related to electric circuits.	**ج- المهارات المهنية الخاصة بالمقرر:**

c3 -Design a diagram graphically for electric circuits .

d-General and Transferable Skills:

On completing this course, students will be able to:

d1- Collect information's about subject.

d2- Collect and analyze the database of information related to different subjects.

d3- Solve problems.

د- المهارات العامة :

- 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:

5-Teaching and Learning Methods

- Lectures using overhead projector and board.
- Discussion sessions
- Problem classes and group tutorial.
- Class activity.
- Laboratory work

٥- اساليب التعليم والتعلم:

The same as normal students, only skeletal disabilities are allowed in the Faculty of Science.

٦- أساليب التعليم والتعلم للطلاب ذوى القدرات المحدودة:

٧- تقويم الطلاب :

7- Student Assessment Methods

Final exam	to assess	a1-a3, b1-b4,c1,d3
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

أ- الأساليب المستخدمة :

Assessment Schedule

Final exam	Week #	16
Oral exam	Week #	16
Practical exam	Week #	15

ب- التوقيت :

Mid-Term Exam	Week #	8		

ج- توزيع الدرجات :

Weighting of Assessments

Final-Term Examination	60%
Oral Examination	10 %
Practical Examination	20%
Semester work	10%
Other types of assessment	0%
Total	100%

٨- قائمة الكتب الدراسية والمراجع :

أ- مذكرات:	– Notes offered by the physics department
ب- كتب ملزمة	
ج- كتب مقترحة :	-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.
د- دوريات علمية أو نشرات..	http://en.wikipedia.org

(أ) مصفوفة المعارف والمهارات المستهدفة من المقرر الدراسى

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