


مختصر توصيف المقرر

:(Course Information)

معلومات المقرر *

فيزياء رياضية 2		اسم المقرر:
فيز 2052		رقم المقرر:
فيز 2042		اسم ورقم المتطلب السابق:
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الرابع		مستوى المقرر:
(0+0+3) 3		الساعات المعتمدة:
Module Title:	Mathematical Physics II	
Module ID:	PHYS 2052	
Prerequisite (Co-requisite):	PHSY 2042	
Co-requisite:	--	
Course Level:	Fourth	
Credit Hours:	3 (3+0+0)	

وصف المقرر :

Module

Description

Complex Numbers-Functions of Complex Variables-Imaginary Unit -Properties of - Complex Numbers -Complex Functions - The Concept of Analytic Function. The Cauchy-Riemann Conditions -Analytic Functions -Cauchy-Riemann Conditions, The Cauchy Theorem -The Cauchy Integral -Introductory Example Cauchy Integral Complex Series -Numerical Series -Functional Series -Power Series -Taylor and Lauren Series – special functions- Gamma function - Beta function

أهداف المقرر :

Module Aims

1	To provide a course on elementary mathematical techniques that are used in the physical sciences courses	1
2	To prepare students for more advanced mathematical courses in the physics	2
3	To develop mathematical skills and methods appropriate for students in the physical sciences	3
4	The Cauchy Integral -Introductory Example Cauchy Integral Complex Series -Numerical Series -Functional Series -Power Series	4

مخرجات التعليم:

Learning

Outcomes:

1	The students should be familiar with Complex Numbers-Functions of Complex Variables	1
2	Know Imaginary Unit -Properties of - Complex Numbers -Complex Functions - The Concept of Analytic Function	2
3	Recognize the Cauchy-Riemann Conditions -Analytic Functions -Cauchy-Riemann Conditions The Cauchy Theorem	3
4	Explain the Cauchy Integral -Introductory Example Cauchy Integral Complex Series -	4
5	Capable of calculating the main operations regarding Numerical Series -Functional Series - Power Series -Taylor and Lauren Series	5

6	Analysis and calculation special functions- Gamma function - Beta function	6
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محتوى المقرر:

Course

Contents:

ساعات التدريس (Hours)	عدد الأسابيع (Weeks)	قائمة الموضوعات (Subjects)
12	4	Complex Numbers-Functions of Complex Variables-Imaginary Unit - Properties of - Complex Numbers -Complex Functions - The Concept of Analytic Function.
12	4	The Cauchy-Riemann Conditions -Analytic Functions -Cauchy-Riemann Conditions The Cauchy Theorem
12	4	
9	3	Taylor and Lauren Series – special functions- Gamma function - Beta function

الكتاب المقرر والمراجع المساندة:

Textbook and

References:

سنة النشر Publishing Year	اسم الناشر Publisher	اسم المؤلف (رئيسي) Author's Name	اسم الكتاب المقرر Textbook title
2006	John Wiley & Sons., Inc	Boas, Mary L.	Mathematical Methods in the Physical.
سنة النشر Publishing Year	اسم الناشر Publisher	اسم المؤلف (رئيسي) Author's Name	اسم المرجع Reference
1991	Oxford University Press Inc	C. Wong	Introduction to Mathematical Physics: Methods and Concepts
2007	John Wiley & Sons,	Kreyszig, Erwin	Advanced engineering mathematics.

