

Form (H)
Short course description

Course title: Complex Analysis I	Course number and code: Math487
Previous course requirement: Math382	Language of the course: Arabic
Course level: Eight level	Effective hours: 4 hours

Course description

وصف المقرر :

<ul style="list-style-type: none"> • Complex numbers • Functions of a complex variable • Elementary functions • Complex integration • Representation series of complex functions • Residue theory 	<ul style="list-style-type: none"> • الأعداد المركبة • الدوال في متغير مركب • الدوال الأولية • التكامل المركب • تمثيل الدوال المركبة بمتسلسلات • نظرية الرواسب
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Course objectives

أهداف المقرر

<ul style="list-style-type: none"> • Manipulate complex numbers. • Study functions of a complex variable, (domain, continuity, differentiation). • Study holomorphic, analytic and harmonic functions, and their properties. • Study representation of complex functions by Laurent series. • Calculate of complex integrals by means of Cauchy theory (including residues). 	<p>1- كيفية التعامل مع الأعداد المركبة. 2- دراسة الدوال في متغير مركب (المجال، الإتصال، التفاضل). 3- مفاهيم الدالة التحليلية، الهولومورفية و التوافقية وخواصها. 4- تمثيل الدوال المركبة بمتسلسلات لوران. 5- حساب العديد من التكاملات بإستعمال نظريات كوشي (الرواسب).</p>
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Learning outcomes (understanding, knowledge, and intellectual and scientific skills)
After studying this course, the student is expected to be able to:

Solve general problems dealing with complex numbers and functions of a complex variable.	Write series representation of analytic functions and describe Laurent series.
Solve problems using the Cauchy formula in its various forms.	Calculate integrals by means of the residue method.

Textbooks adopted and supporting references

Title of the book	Author's name	Publisher's name	Date of publication
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Complex variables and applications 8 th Edition.	J. W. Brown & R.V. Churchill	McGraw-Hill Companies.	2008
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