

27014 - Complex Analysis

Información del Plan Docente

Academic Year	2016/17
Academic center	100 - Facultad de Ciencias
Degree	453 - Degree in Mathematics
ECTS	9.0
Course	
Period	Annual
Subject Type	Compulsory
Module	---

1. Basic info

1.1. Recommendations to take this course

1.2. Activities and key dates for the course

2. Initiation

2.1. Learning outcomes that define the subject

2.2. Introduction

3. Context and competences

3.1. Goals

3.2. Context and meaning of the subject in the degree

3.3. Competences

3.4. Importance of learning outcomes

4. Evaluation

5. Activities and resources

5.1. General methodological presentation

Theoretical and problem sessions on the blackboard.

Use of moodle for communicating and displaying learning material.

Mentoring.

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5.2.Learning activities

Master classes on theoretical results and key problems.

Problem sessions to understand and apply the theoretical results.

Problem assignments for individual work.

Individual tutoring.

See http://www.unizar.es/analisis_matematico/docencia.html and <https://moodle2.unizar.es/> for more information and material.

5.3.Program

1. Holomorphic functions. Cauchy-Riemann conditions. Harmonic functions.

2. Analytic functions. Power series. Elementary functions.

3. Complex integration. Cauchy local theory.

4. Cauchy global theory. Cycles and homology. Simple connection.

5. Zeroes and singularities. Meromorphic functions. Laurent expansions.

6. Residue theorem and applications.

7. Conformal mappings.

5.4.Planning and scheduling

Three hours weekly of master classes all year long.

Lessons 1,2,3 correspond to the first semester. Lessons 4 to 7 to the second semester.

Exam period and dates and the academic calendar is available at the Faculty of Science web page, <http://ciencias.unizar.es/web/horarios.do>

5.5.Bibliography and recommended resources

Conway, John B.. Functions of one complex variable / John B. Conway . - 2nd ed New

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York : Springer, cop. 1978

Palka, Bruce P. An introduction to complex function theory / Bruce P. Palka New York : Springer-Verlag, c1991

Ponnusamy, S.. Complex variables with applications / S. Ponnusamy, Herb Silverman Boston : Birkhauser, 2006

Rudin, Walter. Análisis real y complejo / Walter Rudin ; traducción José María Martínez Ansemil . - 3a. ed. Madrid[etc] : McGraw-Hill, cop.1987

See also http://www.unizar.es/analisis_matematico/docencia.html and <https://moodle2.unizar.es/>