SUBJECT TEACHING GUIDE

367 - Themes on Geometry and Topology

Master's Degree in Mathematics and Computing

Academic year 2023-2024

1. IDENTIFYING DATA				
Degree	Master's Degree in Mathematics and Computing		Type and Year	Optional. Year 1
Faculty	Faculty of Sciences			
Discipline				
Course unit title and code	367 - Themes on Geometry and Topology			
Number of ECTS credits allocated	3	Term	Semester based (2)	
Web				
Language of instruction	Spanish	English Friendly	Yes	Mode of delivery	Face-to-face

Department	DPTO. MATEMATICAS, ESTADISTICA Y COMPUTACION
Name of lecturer	NURIA CORRAL PEREZ
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Other lecturers	

3.1 LEARNING OUTCOMES
- To know and to be able to work with different techniques used in the study of singularities

4. OBJECTIVES
To give an introduction to some research subjects in the area of Geometry and Topology

6. COURSE ORGANIZATION

	CONTENTS
1	Introduction to the singularities of plane curves
1.1	Singular points of a plane curve: germs of curves, multiplicity, tangent cone
1.2	Newton-Puiseux algorithm: Newton polygon, fractionary power series, Puiseux series, Puiseux theorem, caracteristic exponents and Puiseux pairs. Semigroup of a plane curve
2	Reduction of singularities of plane curves: blow-up of a point, strict transform of a curve, infinitely near points, reduction of singularities, dual graph, equisingularity invariants
3	Prepare an individual project

7. ASSESSMENT METHODS AND CRITERIA

Description	Type	Final Eval.	Reassessn	%
Resolution of problems	Others	No	Yes	70,00
Final Project	Work	No	Yes	30,00
TOTAL				100,00
Observations				
Observations for part-time students				
These students can choose between the evaluation system of regular students and one in which they only need to do the final project.				

8. BIBLIOGRAPHY AND TEACHING MATERIALS

BASIC
E. Casas-Alvero: Singularities of Plane Curves. London Mathematical Society, Lecture Note Series, 276. Cambridge University Press, 2000.
C. T. C. Wall: Singular points of plane curves. London Mathematical Society Student Texts, 63. Cambridge University Press, 2004.