

SUBJECT TEACHING GUIDE

G119 - Mathematics for Secondary Education

Double Degree in Physics and Mathematics Degree in Mathematics

Academic year 2021-2022

1. IDENTIFYING DATA					
Degree	Double Degree in Physics and Mathematics Degree in Mathematics			Type and Year	Optional. Year 5 Optional. Year 4
Faculty	Faculty of Sciences				
Discipline	Subject Area: Mathematics for Secondary Education Mention in Pure and Applied Mathematics				
Course unit title and code	G119 - Mathematics for Secondary Education				
Number of ECTS credits allocated	6	Term	Semester based (2)		
Web	https://moodle.unican.es/course/view.php?id=3659				
Language of instruction	Spanish	English Friendly	No	Mode of delivery	Face-to-face

Department	DPTO. MATEMATICAS, ESTADISTICA Y COMPUTACION				
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Other lecturers	RAUL FERNANDEZ COBOS				

3.1 LEARNING OUTCOMES
- Appreciate the instructional, social, and cultural character of secondary school mathematics.
- Know how the learning of different topics of secondary mathematics develops.
- Know the historical development of some concepts in secondary school mathematics. Reflect about the different ways to represent them. Know different situations and problems they are linked to. Know and interpret students errors and difficulties. Know and value materials and resources to teach topics in secondary school mathematics.
- Assess teaching proposals related to topics in secondary education mathematics, adapted to students, and to different grades.
- Interpret and adapt secondary school mathematics curricula.
- Know and use relevant databases and professional organizations in Mathematics Education.

4. OBJECTIVES

Show the nature of secondary school mathematics and the problems related to their teaching.
Develop professional skills linked to secondary school mathematics' teaching planning.
Develop in the students a commitment to training, and a critical and reflective attitude towards Mathematics Education.

6. COURSE ORGANIZATION

CONTENTS	
1	1. Errors and difficulties in Secondary School Mathematics.
2	2. History of Mathematics as a didactic resource in Secondary Education.
3	3. Materials, resources and representations in Secondary School Mathematics.

7. ASSESSMENT METHODS AND CRITERIA

Description	Type	Final Eval.	Reassessn	%
Evaluation activities during the semester (60%)	Work	Yes	Yes	60,00
Periodic activities to be done in class (10%).	Others	Yes	Yes	10,00
Final exam (30%)	Written exam	Yes	Yes	30,00
TOTAL				100,00
Observations				
<p>-The final score is the sum of the scores got in the 'evaluation activities' (60%), 'periodic activities, done in the class' (10%) and the one got on the final exam (30%).</p> <p>-If class attendance is not possible because of a justified cause (ej., Erasmus, a medical issue or similar) the final score is the sum of the score got in the 'evaluation activities' (30%) and the one got in the 'final exam' (70%).</p> <p>-To pass the subject in the extraordinary call, students must do an exam graded on 10 over 10 points.</p>				
Observations for part-time students				
Part-time students, even in the extraordinary call, will have to do a final exam, graded on 10 over 10 points.				

8. BIBLIOGRAPHY AND TEACHING MATERIALS

BASIC
-Fauvel, J. y van Maanen, J. A. (2000). History in mathematics education: An ICMI study. The Netherlands: Kluwer Academic Publishers.
-Kilpatrick, J., Rico, L. y Sierra, M. (1994). Educación Matemática e Investigación. Madrid: Editorial Síntesis.
-Rico, L. y Moreno, A. (Eds.) (2016). Elementos de didáctica de la matemática para el profesor de Secundaria. Madrid: Pirámide.
-Rico, L. (Ed.) (1997). La Educación Matemática en la Enseñanza Secundaria. Barcelona: Editorial Horsori.

