SUBJECT TEACHING GUIDE

M1113 - Learning and Teaching of Mathematics

Master's Degree in Secondary Education Teacher Training

Academic year 2019-2020

1. IDENTIFYING DATA					
Degree	Master's Degree in Secondary Education Teacher Training			Type and Year	Optional. Year 1
Faculty	School of Teacher Training				
Discipline	Subject Area: Learning and Teaching of Mathematics Specific Module in the Speciality of Mathermatics				
Course unit title and code	M1113 - Learning and Teaching of Mathematics				
Number of ECTS credits allocated	9	Term		Semester based (2)	
Web					
Language of instruction	Spanish	English Friendly	No	Mode of delivery	Face-to-face

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3.1 LEARNING OUTCOMES
- Using problem solving methodology for developing student mathematical competence
Using materials and resources for developing didactic activities
Analysing, designing and communicating didactic mathematical units
Analysing, designing and communicating annual mathematical programs
Using main mathematics education resources
Designing assessments for evaluating mathematical knowledge

4. OBJECTIVES
Knowing and employing problem solving as a tool for the teaching of mathematics
Knowing and using didactic materials and resources for teaching mathematics in secondary education
Developing abilities for designing mathematical content, especially annual units and classroom activities
Knowing and using diagnostic assessments for understanding and improving mathematics learning in secondary education
Analysing and designing assessment models in mathematics.
Developing a critical and reflective attitude as mathematics pre-service teacher.

6. COURSE ORGANIZATION	
CONTENTS	
1	Learning difficulties in mathematics through problem solving
2	Didactic materials, resources and instruments for the teaching of mathematics
3	Selection and demonstration of teaching activities. Analysis and design of annual mathematics units.
4	Methodological approaches and evaluation for the teaching of mathematics: analysis and design of didactic units

7. ASSESSMENT METHODS AND CRITERIA

Description	Type	Final Eval.	Reassessn	%
Design and oral presentation of a mathematics didactic unit including STEAM activities	Work	No	Yes	31,00
Analysis and design of mathematics activities using different resources	Work	No	No	23,00
Design and oral presentation of an annual mathematical program	Work	No	Yes	31,00
Classification and resolution of mathematical task according to problem solving strategies	Work	No	No	15,00
TOTAL				100,00

Observations

Classroom attendance is compulsory.
The designs and presentations of an annual program and a didactic unit are compulsory for passing the subject.

Other aspects to consider:
SPELLING:
It is understood that university students have assumed linguistic abilities in relation to oral and written expression. Therefore, spelling correction, grammar and lexical in the essays and exams carried out to overcome the subject is essential.

PLAGIARISM:
Regarding the fraudulent performance (plagiarism) of the evaluation tests, the qualification will be adjusted to the established in the article 54.1 of the Regulation of the evaluation processes in the University of Cantabria: 'The fraudulent realization of the tests or activities evaluation will directly involve the grade of '0' in the subject '.

CITATION RULES:
Finally, the School Board approved that the Faculty assumes the APA RULES for all academic work as citation criteria . Although these standards have different editions , as an initial reference we attach the BUC link, hoping that this will be helpful and a reference for its development: http://web.unican.es/buc/recursos/guias-y-tutoriales/guia ? g = 28

Observations for part-time students

Part time students will undertake an exam concerning materials and resources (38%) as well as designing and presenting the annual program (31%) and the didactic unit (31%).

8. BIBLIOGRAPHY AND TEACHING MATERIALS

BASIC

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Giménez J. (1997). Evaluación en matemáticas. Una integración de perspectivas. Madrid. Síntesis.

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Hitt F. (1998). Difficulties in the articulation of different representations linked to the concept of function . Journal of Mathematical Behavior, Vol. 17(1), pp. 123-134.

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Resnick, L.B. y Ford, W.W. (1990). La enseñanza de las matemáticas y sus fundamentos psicológicos. Barcelona, Paidós/MEC.

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Wim Van Dooren, Dirk De Bock, Lieven Verschaffel (2006). La búsqueda de las raíces de la ilusión de linealidad. Indivisa: Boletín de estudios e investigación, Nº. Extra 4, (Ejemplar dedicado a: VII Seminario de Investigación en Pensamiento Numérico y Algebraico (PNA)) , pags. 115-138

Bolt, B., Hobbs, D., & García, L. B. (1991). 101 proyectos matemáticos.