SUBJECT TEACHING GUIDE

M1110 - Projects and Proposals for Curriculum Innovation in Physics and Chemistry, and Technology
Master's Degree in Secondary Education Teacher Training

Academic year 2017-2018

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: Innovation in Teaching and Introduction to Educational Research Specific Module in the Speciality of Physics, Chemistry and Technology				
Course unit title and code	M1110 - Projects and Proposals for Curriculum Innovation in Physics and Chemistry, and Technology				
Number of ECTS credits allocated	3	Term		Semester based	
Web					
Language of instruction	Spanish	English Friendly	No	Mode of delivery	Face-to-face

Department	DPTO. FISICA APLICADA
Name of lecturer	MARIA DEL CARMEN GARCIA ALONSO
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Other lecturers	ANGEL CUESTA GARCIA

3.1 LEARNING OUTCOMES

- 1. The student knows and applies innovative teaching proposals in the disciplines of Physics, Chemistry and Technology.
2. The student is able to critically analyse the performanc of teaching, good practices and orientation.
3. The student is able to come up with alternatives and solutions to the problems regarding the teaching and learning of the disciplines.
4. The student knows and is able to apply methodologies and techniques based on educational research and assessment and is able to design and develop research, innovation and assessment projects.
5. The student is able to structure scientific contents according to their interdisciplinary nature along with the CTS coordinates.
6. Understand the meaning of" technological and scientific literacy" which is proposed from the CTS approaches.
7. The student knows how to apply the acquired knowledge to submit an innovativa proposal in the framework of CTS for a curriculum unit.
8. The student is familiar with on-going innovation projects in Sciences and Tecnology.
9. The student has the ability to initiate innovation projects
10. The student is familiar with the resources that the network offers as educational innovative tools
11. The student knows about the employed methodology in IT subjects.

4. OBJECTIVES

Know and apply innovative teaching proposals in the field of physics and chemistry, and technology. Critically analyze the performance of teaching, good practices and guidance.

Propose alternatives and solutions to problems relating teaching and learning subjects. Know and apply methodologies and techniques basic research and educational evaluation and be able to design and develop projects for research, innovation and evaluation.

Understand and analyze the possibilities of contents structure scientists attending an interdisciplinary nature do according to the coordinates of the CTS.

Knowing innovation projects related relations science, technology and society.
Understand and analyze critically what represent the "Scientific and Technological literacy" proposed approaches from the CTS.

Apply the knowledge acquired to submit a proposal for Innovation in the CTS framework for a unit of the curriculum.
Handle the different resource that offers network as tools for working with students.

Knowing the methodology used in the development of various computer applications courses computing and information technology and communication.

6. COURSE ORGANIZATION	
CONTENTS	
1	Analysis of curricular innovation in Physics and Chemistry
2	Physicas and Chemistry from a CTS approach. Salters Project. Environmental approach. APQUA Project
3	Small proposals in curricular innovation - Interdisciplinarity - Work on specific significative problems Other specific innovation projects
4	The NNTT as educative resources in Technology. Multimedia Technology applied to education Web Research Project banks
5	Projects and innovation plans proposed by the administration and the teachers. Bilingualism- Different types of Bachillerato according to specialites studied.
6	Teacher Training Teaching education in the classroom, seminars, workshops etc, exchange experiences Distance learning: The NTT applied to education

7. ASSESSMENT METHODS AND CRITERIA				
Description	Type	Final Eval.	Reassessn	%
Classwork and class	Work	No	No	40,00
Attendance and participation in virtual classroom	Activity evaluation with Virtual Media	No	Yes	40,00
Written exam	Written exam	No	Yes	20,00
TOTAL				100,00

Observations
The lack of attendance of 10% of the classes will lead to the suspension in this subject. Attendance to class must be accompanied by questions, interventions and input of ideas in class discussions. The written examination will not be an essential requirement if the student has widely passed the other methods of evaluation
Observations for part-time students
Students who opt for the distance mode should contact the responsible teachers before the start of the classes. They will have to do some homework weekly and take an exam. The assignments will have a weight of 50%, they must be submitted on the date and have a grade higher than five points in order to pass the subject. The exam will be related to all the contents of the subject and will have a weight of 50%

8. BIBLIOGRAPHY AND TEACHING MATERIALS

BASIC

La enseñanza de las ciencias desde una perspectiva Ciencia- Tecnología-Sociedad. Pedro Membiela. Editorial Narcea. ISBN 842771390-8 Año:2001
Monografía: La educación Ciencia-Tecnología-Sociedad. Alambique. Didáctica de las Ciencias Experimentales, 1995 III La física Salters: un proyecto para la enseñanza contextualizada de la física en el bachillerato. Octavi Plana Alambique : Didáctica de las Ciencias Experimentales, 2005 OCT-DIC; XI (46)
Investigar para innovar en enseñanza. Ma Luisa Sevillano García. Editorial Pearson
La física y la química en secundaria. María Jesús Martín Díaz, Miguel Ángel Gómez Crespo, M. Sagrario Gutiérrez Julián Editorial Narcea ISBN 842441277-4 Año:2000.
APQUA. Barcelona: editorial Reverté. www.etseq.urv.net/apqua.
Grupo Axarquía. Ciencias de la Naturaleza (4volúmenes, Edelvives. 1995)
Física y Química. Investigación, innovación y buenas prácticas. Editorial Graó. EAN13: 9788499800813. Año: 2011 Autores: Aureli Caamaño, Vicente Mellado, Digna Couso, M. Isabel Hernández, Roser Pintó, Josefa Guitart, Octavi Plana, Josep Corominas, César Sancho, Montserrat Tortosa, Julian Oró, Octavi Casellas, Glinda Irazoque, Antonio de Pro, Antxon Anta, Manuel Belmonte