UniversidadeVigo

IDENTIFYING DATA
Technology and Informatics for Secondary School Teachers

Subject	Technology and Informatics for Secondary School Teachers
Code	O02M066V02208
Study programme	Máster Universitario en Profesorado en Educación Secundaria Obligatoria, Bachillerato, Formación Profesional y Enseñanzas de Idiomas. Especialidad: Ciencias Experimentales. Matemáticas y Tecnología

Descriptors	ECTS Credits		Choose	Year	Quadmester
	5		Optional	1st	1st

Teaching language	#EnglishFriendly Galician
Department	
Coordinator	Añel Cabanelas, Juan Antonio
Lecturers	Añel Cabanelas, Juan Antonio
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Web	http://http://mpe.uvigo.es/index.php?lang=es
General description	(*)The subject of Technology and Informatics for Secondary Education Teachers is proposed, in this master's degree, as a complement to the training of future teachers of Technology and Informatics, who, coming from different scientific fields, must know the wide variety of content that they study in the respective Secondary Education classes. It is intended, therefore, to enhance in future teachers the basic skills that they themselves will have to develop in their Secondary Education students, and thus be able to design activity and work programs that help their future students to achieve them. English Friendly subject: International students may request from the teachers: a) resources and bibliographic references in English, b) tutoring sessions in English, c) exams and assessments in English.

Training and Learning Results

Code	
B1	
B4	
B16	
B17	
C6	(*)Coñecer a evolución histórica do sistema educativo no noso país.
C14	(*)Coñecer o valor formativo e cultural das materias correspondentes á especialización.
C15	(*)Coñecer os contidos que se cursan nos respectivos ensinos.
C16	(*)Coñecer a historia e os desenvolvementos recentes das materias e as súas perspectivas para poder transmitir unha visión dinámica das mesmas.
C17	(*)Coñecer contextos e situacións en que se usan ou aplican os diversos contidos curriculares
C26	(*)Identificar os problemas relativos ao ensino e a aprendizaxe das materias da especialización e expor alternativas e solucións.

| D1 | (*)Utilizar bibliografía e ferramentas de procura de recursos bibliográficos xenerais e específicos, incluíndo o acceso por Internet. |
| D3 | (*)Potenciar a capacidade para o traballo en contornas cooperativas e pluridisciplinarios |

Expected results from this subject

Expected results from this subject	Training and Learning Results
Identify the conceptual and procedural bases of the different elements of the curricula of the subjects included in Technology and Computer Science.	B1 B4 C6 C14 C15 C16 D1
In both oral presentations and written assignments, manage resources of all kinds to access and present up-to-date information and knowledge on the subjects of the speciality.	B4 B16 B17 C16 C17 D1 D3
Develop a critical attitude towards curricular developments by elaborating personal criteria for assessing them.	B17 C17 C26 D3

Contents

Topic	
Analysis of the curriculum	Elements of the curriculum The curricular organization: courses
Subjects in Technology	Materials for technical use. Structures. Machines and mechanisms. Electricity and electronics. Automatic control and robotics. Pneumatics and hydraulics. Communication systems: telephony, radio and TV
Subjects in Computer Sciences	Conceptions on ICT and Computing Operating systems Office suites Multimedia editing Internet and networks Safety and ethics Programming
Technology and Society	Cross-sectional contents The relationships between science, technology and society.

Planning

	Class hours	Hours outside the classroom	Total hours
Practices through ICT	5	30	35
Mentored work	3	9	12
Presentation	4	38	42
Lecturing	10	20	30
Debate	3	3	6

*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.

Methodologies

	Description
Practices through ICT	Selection, handling and evaluation of simulations related to the topics covered in the course.
Mentored work	Completion and delivery of a written work assigned by the lecturer: bibliographic reviews, summaries, diagrams, etc.
Presentation	Presentation of the work developed (individually or in small groups) using multimedia and IT resources relevant for the context of the subject.
Lecturing	Master class delivered by the Lecturer with debate and activities in the classroom.
Debate	Holding debates in the classroom to learn different points of view about the teaching of ICT and computer science.

Personalized assistance

Methodologies	Description
Lecturing	
Presentation	
Practices through ICT	
Mentored work	
Debate	

Assessment

	Description	Qualification	Training and Learning Results		
Practices through ICT	Through written or published work, we will assess the knowledge of the simulators and the criteria used to chose them.	20	B1 B4	C15 C16 C17	D1
Mentored work	Through a written work, we will assess the ability of the student to structure the contents of the subjects of the speciality.	30	B1 B4 B16 B17	C14 C15 C16 C17	D1 D3
Presentation	Assessment of oral expression, use of multimedia resources and communication skills.	25	B4 B16 B17	C26	D1 D3
Lecturing	Assessment of the engagement and participation in debates and other activities developed in the classroom.	15	B4 B16 B17		D3
Debate	Participation in the debates and the originality and completeness of the arguments used will be valued, as well as the ability to present opposing points of view.	10			

Other comments on the Evaluation

Observations:

- Deadlines for the delivery of activities, work, etc. will be communicated by the teachers in due time. It is mandatory to comply with them to be considered for the continuous assessment evaluation.

- Students not passing the course by continuous assessment, will have to undergo an exam (written test) on the date in the official calendar (it will be made public in due course). The value of the exam will represent 100% of the final score. The contents of the exam will be theoretical and practical questions about the core contents of the course.

Sources of information

Basic Bibliography

Silvia, F., **Tecnología Industrial I**, MacGraw-Hill, 2005

Val, S., González J., Ibañez J., Huertas J.L., Torres S., **Tecnología Industrial II**, MacGraw-Hill, 2005

Guash Vallcorba M., Borrego Roncal M., Jordan Arias J., **Electrotecnia**, MacGraw-Hill, 2008

Vejo P., **Tecnología**, MacGraw-Hill, 2006

García P., Ferro M., Ali I., **Tecnología de la Información y la Comunicación**, Anaya, 2008

Complementary Bibliography

Barón M., **Enseñar y aprender tecnología**, Novedades Educativas, 2004

Marpegán C.M., Mandón M.J., Pintos J.C., **El placer de enseñar tecnología**, Novedades Educativas, 2009

Abad J.J., **Ciencia, tecnología y sociedad**, MacGraw-Hill, 1997

Vázquez Alonso A., **Didáctica de la Tecnología**, Síntese, 2010

Revista Iberoamericana de Ciencia Tecnología y Sociedad., **http://www.revistacts.net/**,

Recursos para las áreas de Tecnología ESO, Tecnología Industrial y Electrotecnia, **http://www.areatecnologia.com/**,

Fundación española para la Ciencia y Tecnología, **http://www.fecyt.es/**,

Almenara, J. C.; Hervás Gomez, C.; Toledo Morales, P., **EL SOFTWARE LIBRE EN LOS CONTEXTOS EDUCATIVOS**, Editorial MAD, 2009

Stallman, R., **SOFTWARE LIBRE PARA UNA SOCIEDAD LIBRE**, Traficantes de Sueños, 2004

INTEF, **Recursos web del INTEF (https://www.intef.es)**,

Recommendations

Subjects that continue the syllabus

The Didactics of Technology and Computer Science in Secondary Education/O02M066V02211