



IDENTIFYING DATA

The Didactics of Technology and Computer Science in Secondary Education

Subject	The Didactics of Technology and Computer Science in Secondary Education			
Code	V02M066V02211			
Study programme	Máster Universitario en Profesorado en Educación Secundaria Obligatoria, Bachillerato, Formación Profesional y Enseñanzas de Idiomas. Especialidad (Vigo): Ciencias Experimentales. Matemáticas y Tecnología			
Descriptors	ECTS Credits	Choose	Year	Quadmester
	6	Optional	1st	2nd
Teaching language	Spanish Galician			
Department				
Coordinator	Valente da Silva Couto, Maria Joao			
Lecturers	Loureiro García, Marcos Valente da Silva Couto, Maria Joao			
E-mail	mvalente@uvigo.es			
Web	http://http://mpe.uvigo.es/es/			
General description	(*)A Didáctica da Tecnoloxía e da Informática comprende a experiencia reflexionada da práctica docente nesta materia incorporando os resultados da investigación levada a cabo pola comunidade científica. Nesta altura, a Didáctica da Tecnoloxía forma parte dun conxunto amplo de coñecemento recollido na Didáctica das Ciencias. Lonxe de constituir un conxunto de normas prácticas e protocolos de actuación a Didáctica pasa a ser progresivamente un corpo de coñecementos e como tal pode tratarse como calquera outra materia do currículo.			

Training and Learning Results

Code	B13
C17	(*)Coñecer contextos e situacións en que se usan ou aplican os diversos contidos curriculares
C18	(*)Coñecer os desenvolvementos teórico-prácticos do ensino e a aprendizaxe das materias correspondentes.
C19	(*)Transformar os currículos en programas de actividades e de traballo.
C20	(*)Adquirir criterios de selección e elaboración de materiais educativos.
C22	(*)Integrar a formación en comunicación audiovisual e multimedia no proceso de ensino-aprendizaxe.
C23	(*)Coñecer estratexias e procedementos de avaliación e entender a avaliación como un procedemento de regulación da aprendizaxe e estímulo ao esforzo.
C24	(*)Coñecer e aplicar propostas docentes innovadoras no ámbito da especialización cursada.
C26	(*)Identificar os problemas relativos ao ensino e a aprendizaxe das materias da especialización e expor alternativas e solucións.
C27	(*)Coñecer e aplicar metodoloxías e técnicas básicas de investigación e avaliación educativas e ser capaz de deseñar e desenvolver proxectos de investigación, innovación e avaliación.
C28	(*)Adquirir experiencia na planificación, na docencia e na avaliación das materias correspondentes á especialización.

- D1 (*)Utilizar bibliografía e ferramentas de procura de recursos bibliográficos xenerais e específicos, incluíndo o acceso por Internet.
- D2 (*)Xestionar de forma óptima o tempo de traballo e organizar os recursos dispoñibles, establecendo prioridades, camiños alternativos e identificando erros lóxicos na toma de decisións.
- D3 (*)Potenciar a capacidade para o traballo en contornas cooperativas e pluridisciplinares

Expected results from this subject

Expected results from this subject	Training and Learning Results
Understand the basic concepts that describe and explain teaching practice.	C26
Analyze existing teaching models and develop personal criteria about the different models	C18 C24 D1
To approach and apply the most appropriate didactic methodologies.	C19 C20 C24
To be able to elaborate teaching-learning activities according to the proposed objectives and evaluation criteria.	C17 C27 C28
To be able to elaborate an evaluation model for a didactic unit.	C23 C27 C28
Be able to find, select and transform didactic resources of different types.	C19 C20 D1 D3
Elaborate activities and tasks for teachers and students.	C19 C20 C27 D2 D3
To know the regulations on the organization of the departments.	B13
Use technologies to support the work carried out.	C22 D1 D3

Contents

Topic	
Technology, science and technique	History of the education of the technology Justification for the introduction of technology in the curriculum
The curriculum	Elements of the curriculum: aims, competences, contents, criteria and evaluation standards
Education and learning: how students learn	Teaching/learning activities. Sequences
Methodology	Didactic methods Project-based learning Other methodological strategies: flipped classroom, gamification
The didactic programation, preparation of didactic units	Preparation of didactic units Didactic resources
Evaluation in technology	Initial evaluation Evaluation and instruments of evaluation, procedural and formative evaluation Final evaluation
The organization of the department	The organization of the department
The teacher as researcher	The teacher as researcher

Planning

	Class hours	Hours outside the classroom	Total hours
Presentation	8	32	40
Lecturing	10	13	23
Mentored work	12	75	87

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

Methodologies

Description

Presentation	Presentation of individual or collective works done by the students followed or preceded by debate in small or big groups
Lecturing	Introduction by the teachers of the conceptual frame with proposals of debate on supposed situations in the classroom
Mentored work	(*)Desenvolvimento de actividades de ensino-aprendizaxe nas áreas da materia.

Personalized assistance

Methodologies	Description
Presentation	Presentation by the teacher of the conclusions extracted from the realisation of works that will show the acquisition of the competences and basic knowledge related to the subject
Lecturing	
Mentored work	Attention and resolution of students doubts in relation to the different activities of the subject. Personalized attention will be guaranteed.

Assessment

	Description	Qualification	Training and Learning Results	
Presentation	Using a tabulated criteria, two presentations will be evaluated (one collective and another individual) valuing contents organisation, conceptual clarity and usage of multimedia resources The collective work will be evaluated by using co-evaluation table by the rest of the students	20	C20 C22 C24 C26 C27	D1 D3
Lecturing	By using a log, we will evaluate participation in the classroom activities.	20		D2 D3
Mentored work	(*)Avaliaremos: calidade e coherencia do conxunto de contidos, uso da bibliografía, entrega puntual, contido do tema, estrutura interna dos documentos.	60	B13 C17 C18 C19 C20 C22 C23 C24 C26 C27 C28	D1 D2 D3

Other comments on the Evaluation

All students, whether they attend class or not, have the right to be evaluated.

The evaluation will be continuous through the monitoring of the students, their work, projects and exhibitions, as well as their attendance and participation in the classroom and in the tutorials.

The documents and files of the course work and assignments will be presented in the virtual classroom of the course in MOOVI.

In order to be eligible for the continuous evaluation through activities in the virtual classroom, it is necessary to attend the classrooms in 80% of the classroom time with an ideal use.

Students who did not attend class or who cannot be evaluated by continuous assessment for missing more than 20% of the classes must take an exam (face-to-face written test).

Sources of information

Basic Bibliography

Carrasco, J. B., **Una didáctica para hoy**, Ediciones Rialp, 2004

De la Herrán, A. e Paredes, J., **Didáctica general: la práctica de la enseñanza en Educación Infantil, Primaria y Secundaria**, McGraw-Hill, 2008

Sevillano, M.L., **Didáctica en el siglo XXI**, McGraw-Hill, 2005

DECRETO 86/2015, do 25 de xuño, polo que se establece o currículo da educación secundaria obrigatoria e do bacharelato na Comunidade Autónoma de Galicia,

José A. Fidalgo y otros, **Tecnología industrial**, Everest,

Jesús Cabrerizo, Julia Rubio Roldán, Santiago Castillo Arredondo, **Programación por competencias**, Pearson,

David Cervera, **Didáctica de la tecnología**, Ed. Graó, 2010

David Cervera, **Tecnología: Investigación, innovación y buenas prácticas**, Ed. Graó, 2010

Complementary Bibliography

Aula Abierta,
Aula de Innovación Educativa,
Contextos Educativos,
Cuadernos de Pedagogía,
Escuela Abierta,
Educación XXI,
Enseñanza & Teaching: Revista interuniversitaria de didáctica,
Estudios Sobre Educación,
Praxis Educativa,
Profesorado: Revista de curriculum y formación del profesorado,
Qurriculum,
Revista Complutense de Educación,
Revista de Educación,
Revista Iberoamerica de Educación,
Banco de imaxes e sons do MEC,
Recursos para a Educación Secundaria Obrigatoria,

Recommendations

Subjects that are recommended to be taken simultaneously

The Organisation of Lecture / Workshop in Technology/V02M066V02212

Subjects that it is recommended to have taken before

Technology and Informatics for Secondary School Teachers/V02M066V02208