



Teaching Guide				
Identifying Data				2016/17
Subject (*)	Development Tools		Code	614G01054
Study programme	Grao en Enxeñaría Informática			
Descriptors				
Cycle	Period	Year	Type	Credits
Graduate	1st four-month period	Fourth	Obligatoria	6
Language	SpanishGalicianEnglish			
Teaching method	Face-to-face			
Prerequisites				
Department	Computación			
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General description	<p>In this subject we will explain the conceptual and practical foundations regarding tools for the development of projects software. In particular we will explain the following tools, his advantages and his correct use from a point of view of Software Engineering:</p> <p>Integrated Development Enviroments: Eclipse</p> <p>Tools for automation of packing: Maven</p> <p>Tools for control of versions and cooperative work : Git</p> <p>Tools for continue integration : Apache Jenckins</p> <p>Tools for task/time/bug tracking: Redmine</p> <p>Tools for analysis of code and dependencies: Codepro Analytix, Sonar</p> <p>Tools for analysis of performance and monitoring: JStat, JConsole, JVVisualVM</p> <p>The subject is very practical and tries to contribute to the student deep knowledge on the tools of development more used nowadays in IT companies.</p>			

Study programme competences	
Code	Study programme competences
A22	Coñecemento e aplicación dos principios, metodoloxías e ciclos de vida da enxeñaría do sóftware.
A25	Capacidade para desenvolver, manter e avaliar servizos e sistemas sóftware que satisfagan todos os requisitos do usuario e se comporten de forma fiable e eficiente, sexan accesibles de desenvolver e manter, e cumpran normas de calidade, aplicando as teorías, principios, métodos e prácticas da enxeñaría do sóftware.
B1	Capacidade de resolución de problemas
B2	Traballo en equipo
B3	Capacidade de análise e síntese
B4	Capacidade para organizar e planificar
C3	Utilizar as ferramentas básicas das tecnoloxías da información e as comunicacións (TIC) necesarias para o exercicio da súa profesión e para a aprendizaxe ao longo da súa vida.
C6	Valorar criticamente o coñecemento, a tecnoloxía e a información dispoñible para resolver os problemas cos que deben enfrentarse.
C7	Asumir como profesional e cidadán a importancia da aprendizaxe ao longo da vida.

Learning outcomes			
Learning outcomes			Study programme competences
Software Development			A25 B2 C3 B3 B4



Software Development	A22	B1	
Conocer e manexar as principais contornas de desenvolvemento			C6
Aprender o manexo de ferramentas de control de versións e de mantemento software	A25	B1 B3	C6
Conocer ferramentas para a xestión de proxectos e seguemento de incidencias	A25		C3 C6 C7
Usar ferramentas de apoio ao despregamento, empaquetado, versionado e distribución do software	A25	B4	C3
Usar ferramentas de inspección de código			B2
Usar ferramentas de análises de rendemento e monitorización de aplicacións	A25		C3 C7

Contents

Topic	Sub-topic
Integrated Development Enviroments	Eclipse
Tools for packing automation	Maven
Tools for version control and cooperative work	Git
Tools for continue integration	Jenkins
Tools for task/time/bug tracking	Redmine
Tools for analysis of code and dependencies	Sonar
Tools for analysis of performance and monitoring	jMeter, JStat, JConsole, JVVisualVM

Planning

Methodologies / tests	Competencies	Ordinary class hours	Student?s personal work hours	Total hours
Supervised projects	B2 B3 B4 C6 C7	7	21	28
Laboratory practice	A22 A25 B1 C3	14	42	56
Mixed objective/subjective test	A22 A25 B1 B3 C6	0.5	0	0.5
Guest lecture / keynote speech	B4 C6 C7	18	47.5	65.5
Personalized attention		0		0

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

Methodologies

Methodologies	Description
Supervised projects	Traballos tutelados propostos polo profesor e desenvolvidos polos estudiantes ou ben en grupo ou ben individualmente.
Laboratory practice	Ao tratarse dunha materia eminentemente práctica o desenvolvemento por parte do alumno dun caso de práctica para o uso de todas as ferramentas comentadas nas leccións maxistrais será fundamental
Mixed objective/subjective test	Avilarase o dominio dos coñecementos teóricos e operativos da materia.
Guest lecture / keynote speech	Clases maxistrais na exposición dos coñecementos teóricos utilizando diferentes recursos: a lousa, transparencias, proxeccións, demostracións e a facultade virtual. Pode incluir conferencia convidada.

Personalized attention

Methodologies	Description



Supervised projects	Se propondrán pequeños trabajos tutelados para la resolución por parte del alumno con el soporte del conocimiento del profesor.		
Laboratory practice	Ao tratarse de una materia eminentemente práctica o desarrollo por parte del alumno de un caso de práctica para el uso de todas las herramientas comentadas en las lecciones maxiarias será fundamental		

Assessment			
Methodologies	Competencies	Description	Qualification
Mixed objective/subjective test	A22 A25 B1 B3 C6	Questions about the acquired knowledge. Questions involving critical reasoning for solving practical problems of the real world. It is mandatory to achieve at least the 40% of the marks in order to pass the course	40
Supervised projects	B2 B3 B4 C6 C7	Tracking of the working process and evaluation of the final output from the students. It is mandatory to achieve at least the 40% of the marks in order to pass the course	20
Laboratory practice	A22 A25 B1 C3	Correctness and completeness of the assignments proposed to the students while adequately using the development tools introduced in the subjects. It is mandatory to achieve at least the 40% of the marks in order to pass the course	40

Assessment comments	
Para la segunda oportunidad, tanto las prácticas y los trabajos como las teorías se evaluarán en examen mixto. Se debe obtener al menos el 40% de la nota mínima en las distintas pruebas para obtener la nota máxima del alumno, que es 4.5.	

Sources of information	
Basic	<ul style="list-style-type: none">- G. Ann Campbell, Patroklos P. Papapetrou (). Sonar in Action. Manning Publications- Andriy Lesyuk (). Mastering Redmine. Packt Publishing- Alan Berg (). Jenkins Continuous Integration Cookbook,. Packt Publishing- Jon Loeliger & Matthew McCullough (). Version Control with Git: Powerful tools and techniques for collaborative software development. O'Reilly- Sonatype Company (). Maven: The Definitive Guide. O'Reilly- John Ferguson Smart (). Jenkins: The Definitive Guide. O'Reilly
Complementary	

Recommendations	
Subjects that it is recommended to have taken before	
Internet and Distributed Systems/614G01023	
Advanced Programming/614G01030	
Subjects that are recommended to be taken simultaneously	
Development Methodologies/614G01051	
Software Verification and Validation/614G01225	
Subjects that continue the syllabus	
Other comments	

(*)The teaching guide is the document in which the URV publishes the information about all its courses. It is a public document and cannot be modified. Only in exceptional cases can it be revised by the competent agent or duly revised so that it is in line with current legislation.
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