



Software Project

Learning Guide – Information for Students

1. Description

Grade	Máster Universitario en Ingeniería de Software - European Master on Software Engineering
Module	Software Project
Area	
Subject	Software Project
Type	Compulsory
ECTS credits	14
Responsible department	Computer Languages and Systems and Software Engineering
Major/Section/	

Academic year	2012/2013
Term	3rd term
Language	English
Web site	



2. Faculty

NAME and SURNAME	OFFICE	email
Natalia Juristo (Coord.)	5104	natalia@fi.upm.es
Ricardo Imbert	5112	rimbert@fi.upm.es
Xavier Ferré	5112	xavier@fi.upm.es

3. Prior knowledge required to take the subject

Passed subjects	<ul style="list-style-type: none">•
Other required learning outcomes	<ul style="list-style-type: none">•



4. Learning goals

SUBJECT-SPECIFIC COMPETENCES AND PROFICIENCY LEVEL		
Code	Competence	Level
SC13	To have a vision of the different specific and emergent aspects of the Software Engineering, and to go further in some of them.	A
SC14	To understand what nowadays software engineering procedures can and cannot reach, their limitations and their possible future evolution.	A
PGC20	To establish connections between desires and needs of the consumer or client and what technology can offer	A
PGC21	To decide among acquiring, developing or applying technology along the wide range of processes, products and services of a company or institution	A
PGC22	To understand the market and its product or service tendencies and needs	A
PGC23	To develop and implement computer based solutions in a professional environment	A

Proficiency level: knowledge (K), comprehension (C), application (A), and analysis and synthesis (S)



SUBJECT LEARNING OUTCOMES			
Code	Learning outcome	Related competences	Proficiency level
LR1	Is able to adapt himself to new national/international academic/professional environments	PGC23	A
LR2	Has acquired experience in the software engineer professional role and his usual tasks in a real professional environment	SC13, PGC23	A
LR3	Is able to show a holistic view (including needs and desires of the client, available technologies and market characteristics) in the performed work as a software engineer in the context of a real proyect	SC14, PGC20, PGC21, PGC22	A



5. Subject assessment system

As it is described in the instructive cooperation agreement between UPM and the company or institution in which the student performs his practicum, the company or institution, at the end of the practicum stage, will issue a certificate assessing the practical period. In addition, the company or institution will issue a final inform detailing the activities the student has performed there during that period. The activities carried out by the student during that time will be also evaluated according to the following signature table:

Table with 7 columns: Indicadores, Siempre (10), Casi Siempre (8-9), Algunas Veces (7-5), Casi Nunca (5-0), No procede, Comentarios. Rows include Competencias lingüísticas comunicativas, Desempeño profesional, and Trabajo en equipo.



	otros miembros	Estableció lazos de comunicación con los otros miembros						
		Trató con respeto y educación a sus compañeros y superiores						
Gestión de Proyectos		Sigue metodologías de trabajo acorde a los objetivos y al alcance del proyecto						
		Aplica las reglamentaciones, normas y estándares establecidos						
		Aporta ideas que contribuyeron a la resolución de problemas existentes o venideros						
		Gestiona su tiempo para entregar el trabajo a tiempo						
		Informa (de forma ejecutiva) sobre el avance del proyecto justificando de forma apropiada cambios en la planificación y alcance del mismo cuando estos fueran posibles y necesarios						

		Nivel de Síntesis	Nivel de Análisis	Nivel de Aplicación	Nivel de Comprensión	Nivel Conocimiento	Comentarios
	<p align="center">COMPETENCIAS</p> <p align="center">(indicar los niveles alcanzados en aquellas relacionadas con su práctica)</p>	<i>Es capaz de idear o crear un procedimiento o técnica nueva e innovadora para solucionar un problema, que no es simplemente una mera recomposición de lo conocido</i>	<i>Frente a problemas diferentes a los que ha solucionado con anterioridad, es capaz de componer una solución a partir de los procedimientos y técnicas que conoce</i>	<i>Conoce los tipos de problemas que se suelen plantear en su trabajo y el procedimiento (o combinación de procedimientos) y técnicas adecuadas para resolverlos</i>	<i>Sabe cómo aplicar un proceso sistemático, paso a paso, aunque no lo conozca de antemano</i>	<i>Conoce y comprende los fundamentos de las técnicas y los procesos que debe manejar</i>	
Respecto de la fase de producción del sistema en que ha trabajado	Capacidad para valorar las necesidades del cliente y especificar los requisitos del sistema para satisfacer estas necesidades						
	Capacidad para realizar el diseño y el desarrollo del sistema conforme a los requisitos						
	Capacidad para diseñar y llevar a cabo las pruebas del sistema						
	Capacidad para implantar el sistema en el entorno requerido						



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CONTINUOUS ASSESSMENT			
Brief description of assessable activities	Time	Place	Weight in grade
Signatures	Week 16		100%
			Total: 100%



6. Brief description of organizational modalities and teaching methods

TEACHING ORGANIZATION		
Scenario	Organizational Modality	Purpose
	Theory Classes	<i>Talk to students</i>
	Seminars/Workshops	<i>Construct knowledge through student interaction and activity</i>
	Practical Classes	<i>Show students what to do</i>
	Placements	<i>Round out student training in a professional setting</i>
	Personal Tutoring	<i>Give students personalized attention</i>
	Group Work	<i>Get students to learn from each other</i>
	Independent Work	<i>Develop self-learning ability</i>



TEACHING METHODS		
	Method	Purpose
	Explanation/Lecture	<i>Transfer information and activate student cognitive processes</i>
	Case Studies	<i>Learning by analyzing real or simulated case studies</i>
	Exercises and Problem Solving	<i>Exercise, test and practice prior knowledge</i>
	Problem-Based Learning (PBL)	<i>Develop active learning through problem solving</i>
	Project-Oriented Learning (POL)	<i>Complete a problem-solving project applying acquired skills and knowledge</i>
	Cooperative Learning	<i>Develop active and meaningful learning through cooperation</i>
	Learning Contract	<i>Develop independent learning</i>

Known as explanation, this teaching method involves the “*presentation of a logically structured topic with the aim of providing information organized according to criteria suited for the purpose*”. This methodology, also known as *lecture*, mainly focuses on the verbal exposition by the teacher of contents on the subject under study. The term *master class* is often used to refer to a special type of lecture taught by a professor on special occasions

Intensive and exhaustive analysis of a real fact, problem or event for the purpose of understanding, interpreting or solving the problem, generating hypotheses, comparing data, thinking, learning or diagnosis and, sometimes, training in possible alternative problem-solving procedures.

Situations where students are asked to develop the suitable or correct solutions by exercising routines, applying formulae or running algorithms, applying information processing procedures and interpreting the results. It is often used to supplement lectures.

Teaching and learning method whose starting point is a problem, designed by the teacher, that the student has to solve to develop a number of previously defined competences.

Teaching and learning method where have a set time to develop a project to solve a problem or perform a task by planning, designing and completing a series of activities. The whole thing is based on developing and applying what they have learned and making effective use of resources.

Interactive approach to the organization of classroom work where students are responsible for their own and their peers’ learning as part of a co-responsibility strategy for achieving group goals and incentives. This is both one of a number of methods for use and an overall teaching approach, or philosophy.

An agreement between the teacher and student on the achievement of learning outcomes through an independent work proposal, supervised by the teacher, and to be accomplished within a set period. The essential points of a learning contract are that it is a written agreement, stating required work and reward, requiring personal involvement and having a time frame for accomplishment.



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BRIEF DESCRIPTION OF THE ORGANIZATIONAL MODALITIES AND TEACHING METHODS

EXTERNAL PRACTICES

Project based learning