



Universitat de Lleida

DEGREE CURRICULUM **INDUSTRIAL COMPUTING**

Coordination: GUIRADO FERNÁNDEZ, FERNANDO

Academic year 2017-18

Subject's general information

Subject name	INDUSTRIAL COMPUTING			
Code	102129			
Semester	2nd Q(SEMESTER) CONTINUED EVALUATION			
Typology	Degree	Course	Typology	Modality
	Bachelor's Degree in Automation and Industrial Electronic Engineering	3	COMPULSORY	Attendance-based
ECTS credits	6			
Groups	1GG,4GP			
Theoretical credits	3			
Practical credits	3			
Coordination	GUIRADO FERNÁNDEZ, FERNANDO			
Department	INFORMATICA I ENGINYERIA INDUSTRIAL			
Teaching load distribution between lectures and independent student work	30% lecture 70% autonomous work			
Important information on data processing	Consult this link for more information.			
Language	Idioma Percentatge d'ús Castellà 0.0 Català 90.0 Anglès 10.0			
Distribution of credits	20% theoretical content 30% classroom activities 50% laboratory			
Office and hour of attention	Email to the professor			

Professor/a (s/es)	Adreça electrònica professor/a (s/es)	Crèdits	Horari de tutoria/lloc
GUIRADO FERNANDEZ, FERNANDO	f.guirado@diei.udl.cat	0	Wednesday 18:00 - 20:00, office 3.07 EPS.
PARDO CASANOVAS, VALENTÍ	valenti.pardo@udl.cat	7,2	Monday, 17:00 - 19:00, office 1.06 EPS. Send a confirmation email through the Virtual Campus.

Subject's extra information

Course taught in the second semester of the third year.

Is within the specific training modules.

It is recommended to have a user-level knowledge of operating systems and programming.

Learning objectives

- User-level knowledge of Linux operating system
- Know how to use the commands associated with the file system in LINUX
- Understand the concept of process and how to use the associated tools in Linux
- Representation of computational problems by pseudocode
- To know the programming language C
- Developing small applications in C language

Competences

Strategic competencies of the University of Lleida

UDL3 - Domain of Information Technology and Communication.

Specific skills of the program

GEEIA3. Basic knowledge of the use and programming of computers, operating systems, databases and computer programs with applications in engineering.

GEEIA19 - Applied knowledge of industrial computing and communications.

Transversal competences of the degree

EPS1 - Ability to solve problems and develop and defend arguments in their area of study.

Subject contents

1. Operative System LINUX
 1. The file system structure
 2. The file system Permission
 3. Process management
2. Language C Programming
 1. The GNU compiler

2. Compiler directives
3. Data types
4. Variable declaration
5. Operators
6. Basic programming structures
7. Functions
8. Data structures
9. Pointers and dynamic memory management.

Methodology

The course is composed by:

- Lecture classes: The main theory for the course will be presented.
- Individual exercises: Some exercises, proposed by the professor, have to be developed and presented individually.
- Laboratory practices: Some practical work will be done using the computers present in the laboratory.

Development plan

	Development
Week 1 (4h Lecture class / 6h Autonomous work)	Presentation and contents summary
	Introduction to the Operative Systems. LINUX operative System - Introduction to the file system
Week 2 (4h Lecture class / 6h Autonomous work)	LINUX operative System - Introduction/File system
	LINUX operative System - File system
Week 3 (4h Lecture class / 6h Autonomous work)	LINUX operative System - Permissions
Week 4 (4h Lecture class / 6h Autonomous work)	LINUX operative System - Process status
Week 5 (4h Lecture class / 6h Autonomous work)	Computational solving problems
	C Programming Introduction
Week 6 (4h Lecture class / 6h Autonomous work)	C Programming Introduction
Week 7 (4h Lecture class / 6h Autonomous work)	Error control and deputation
	Structured programming - Functions - Libraries
Week 8 (4h Lecture class / 6h Autonomous work)	Structured programming - Functions - Libraries
	<i>Partial exam doubts session</i>
Week 9	Partial Exams
Week 10 (4h Lecture class / 6h Autonomous work)	Arrays - Vectors

Week 11 (4h Lecture class / 6h Autonomous work)	Data structures
Week 12 (4h Lecture class / 6h Autonomous work)	Pointers
Week 13 (4h Lecture class / 6h Autonomous work)	Dynamic memory management
Week 14 (4h Lecture class / 6h Autonomous work)	Dynamic memory management
Week 15	<i>Doubts session</i>

Evaluation

The grade has two parts: Exams and Practice

The mark of the exam is 30% of the total mark of the subject. There will be two exams one for each part, which will have the same weight and have no minimum mark.

The note of practice is 70% of the total mark of the subject.

The practices of the course are:

- PRA1. · Linux Filesystem
- PRA2. Linux · Permits
- PRA3. · Linux Processes
- PRA4. C · flow control
- PRA5. C · Structured programming: functions and libraries
- PRA6. C · Vectors and random numbers
- PRA7. · C Data Structures
- PRA8. · · C pointers Dynamic memory

Requirements / Features practices:

Practices are compulsory and non-recoverable.

In order to be evaluated, the practices must pass a validation test that will not take any mark.

They have no minimum mark.

Practices can be made in pairs.

Bibliography

Bibliografía recomendada

Blanco, Jaime. Linux/Ubuntu : curso de iniciación. Inforbook's, DL 2006

Dalheimer, Matthias Kalle. Guía de referencia y aprendizaje Linux. Anaya Multimedia, cop. 2006, Edición 2ª ed.

H.M. Deitel and P.J. Deitel. ComoProgramar en C/C++. Prentice-Hall, segunda edición, 2002.

B.W. Kernighan and D.M. Ritchie. Ellenguaje de programación C. Prentice-Hall, segundaedición, 1991.

