30321 - Systems Architecture

Syllabus Information

Academic Year: 2019/20
Subject: 30321 - Systems Architecture
Faculty / School: 110 - Escuela de Ingeniería y Arquitectura
Degree: 438 - Bachelor's Degree in Telecomunications Technology and Services Engineering
ECTS: 6.0
Year: 3
Semester: First semester
Subject Type: Compulsory
Module: ---

1.General information

1.1.Aims of the course

1.2.Context and importance of this course in the degree

1.3.Recommendations to take this course

2.Learning goals

2.1.Competences

2.2.Learning goals

2.3.Importance of learning goals

3.Assessment (1st and 2nd call)

3.1.Assessment tasks (description of tasks, marking system and assessment criteria)

4.Methodology, learning tasks, syllabus and resources

4.1.Methodological overview

Course Objectives

1. Understand the structure and function of an operating system through its main elements: files and processes.
2. Acquire the basic knowledge for using the services of an operating system from the point of view of an advanced user.
3. Know the problems caused by concurrent access to data and resources as well as traditional methods of communication between processes.

The learning process designed for this course is based on:
The monitoring of the programmed learning activities

4.2.Learning tasks

The program provided to the students to help them achieve the expected results includes the following activities:
? Assistance and achievement in class
? Solving problems in small groups
? Performing assisted laboratory practices

? Performing individual lab-work

? Independent learning and individual work using the material utilized in the classroom and laboratory in addition to a collection of problems and bibliography.

? Resolution of queries through customized tutoring or small group tutoring.

? Performing the corresponding evaluation tests

4.3.Syllabus

The content given in class will be organized as follows:

? C Language

　? We will spend three hours in its description

　? A big part of the labs, exercises and exams will consist of developing small codes in C

? Introduction

　? Structure and function of an operating system

　? Classification of operating systems

　? Review of fundamental concepts

? Processes

　? Processes management

　? UNIX: process-related system calls

　? Implementation of a command interpreter

　? Threads: management and system calls

? File system

　? Files management

　? UNIX: File system related system calls

　? Basic communication between processes: pipes

? Memory

　? Memory management

　? UNIX: memory-related system calls

? UNIX: user vision

　? Four hours of lab (Lab 1 and 2)

Assisted laboratory practices on the content given in lectures:

　? Lab 1 y 2: UNIX: user view

　? Lab 3. Processes management

　? Lab 4. Signals

　? Lab 5. Tools for program development (ar and make)

　? Lab 6. File system management

　? Lab 7. Communication between processes

4.4.Course planning and calendar

Schedule of lectures and presentation of works:

It will be set for each group once the academic calendar of the University of Zaragoza and each center is approved.

4.5.Bibliography and recommended resources

http://biblos.unizar.es/br/br_citas.php?codigo=30321&year=2019

The material provided in class including a collection of exercices.