

## 30210 - Operating Systems

### Syllabus Information

**Academic Year:** 2020/21

**Subject:** 30210 - Operating Systems

**Faculty / School:** 110 - Escuela de Ingeniería y Arquitectura  
326 - Escuela Universitaria Politécnica de Teruel

**Degree:** 330 - Complementos de formación Máster/Doctorado  
443 - Bachelor's Degree in Informatics Engineering  
439 - Bachelor's Degree in Informatics Engineering

**ECTS:** 6.0

**Year:** 2

**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

Monitoring of learning activities for this subject.

#### 4.2.Learning tasks

The program offered to help the student achieve the expected results includes the following activities:

- Class attendance
- Problem solving in small groups
- Performing assisted laboratory practices .
- Study and personal work, for which, in addition to the material used in the classroom and the laboratory, we provide a collection of problems and bibliography
- Resolution of doubts through personal tutorials or in small groups
- Accomplishment of the corresponding evaluation tests

#### 4.3.Syllabus

Introduction

- Operating Systems structure and function
- Classification of Operating Systems
- Review of basic concepts
- Using interpreter orders and basic utilities
- Processes
  - Process management
  - UNIX: System calls related to processes
  - Implementation of a shell

- Input / Output
  - Input / Output Management
  - UNIX: System calls related to files
  - Elementary process communication: pipes

- Memory
  - Memory Management
  - UNIX: System calls related to memory

#### **4.4.Course planning and calendar**

The course is organized in 2 hours of class and 1 hour of problems each week.

In addition, 6 sessions of practice of 2 hours each are performed.

The schedule will be implemented for each teaching group when the academic calendar of the University of Zaragoza is approved

#### **4.5.Bibliography and recommended resources**

1. A. Silberschatz, P. Galvin and G. Gagne. "Operating System Concepts", 7th edition. John Wiley & Sons, 2005
2. W. Stallings. "Sistemas Operativos", quinta edición. Prentice Hall 2005
3. A.S. Tanenbaum. "Modern Operating Systems". Prentice Hall, 1992
4. W.R. Stevens., S. A. Rago "Advanced Programming in the UNIX Environment?", 2nd Ed. Addison Wesley, 2005.
5. H. Schildt. "Manual de referencia C", Cuarta Edición. McGraw- Hill, 2001. (muy completo y bien estructurado)
6. J.S. Peters "UNIX programming". Harcourt Brace Jovanovich, 1989. (Buen libro para programación en shell)