

**Course Syllabus**  
**OPERATING SYSTEMS**

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Program: Computer Science

**1. Course number and name**

CCPG1013 - OPERATING SYSTEMS

**2. Credits and contact hours**

3 credits and 3 contact hours

**3. Instructor's course or coordinator's name**

DANIEL ERICK OCHOA DONOSO

**4. Text book, title, author, and year**

\*Silberschatz, Galvin. Sistemas Operativos (9)

a. Other supplemental materials

\*Andrew Tanenbaum. Sistemas Operativos Modernos (3)

**5. Specific course information**

a. Brief description of the content of the course (catalog description)

This course presents the Operating Systems concepts for multiprogramming environments. Techniques and policies for management of the main computer resources: processor, memory and storage, are discussed as well as algorithms for sharing resources by concurrent processes.

b. Prerequisites

COMPUTER ORGANIZATION - CCPG1018

c. This course is a: Required

**6. Specific goals for the course**

a. Specific outcomes of instruction

1.- To describe well-known techniques for computer resources management to characterize a given Operating System.

2.- To understand the concept of a process, its state and transitions within a multiprogrammed environment to evaluate the use of CPU time.

3.- To apply classical synchronization algorithms on shared resources for solving interprocess communication problems.

4.- To evaluate the performance of a system using relevant metrics for detecting potential Operating System issues.

5.- To design a program that by exploiting the techniques learned in class can show a performance improvement on key system parameters.

b. Explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course

(4) Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.

(6) Apply computer science theory and software development fundamentals to produce computing-based solutions.



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#### 7. Brief list of topics to be covered

- 1.- Operating Systems structures
- 2.- Processes and Threads
- 3.- CPU Scheduling
- 4.- Process Synchronization
- 5.- Deadlock
- 6.- Main Memory Management
- 7.- Virtual Memory Management
- 8.- File Systems