

Course Syllabus

COMPUTER ORGANIZATION

Printed by: lisacabe

Program: Computer Science

1. Course number and name

CCPG1018 - COMPUTER ORGANIZATION

2. Credits and contact hours

3 credits and 3 contact hours

3. Instructor's course or coordinator's name

SIXTO ERNESTO GARCIA AGUILAR

4. Text book, title, author, and year

*David A. Patterson, John L. Hennessy.. Computer Organization and Design: The Hardware/Software Interface (Fifth Edition.)

a. Other supplemental materials

*John L. Hennessy, David A. Patterson.. Computer Architecture: A Quantitative Approach (Sixth Edition)

5. Specific course information

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

This course focuses on the instruction set architecture (ISA) of reduced instructions (RISC) or complex instructions (CISC) technologies. The course also explores the implementations of the arithmetic, logical and control operations at the hardware level using the ISA of a computer. The implementation in hardware of the statements of programs written in high level language, with the use of assembler and the role of the compiler is related. The design principles for the implementation of a cascade architecture and the various improvement methods to increase the productivity and performance of a computer are analyzed. Finally, various concepts and examples of processors are introduced in parallel.

b. Prerequisites

SYSTEMS PROGRAMMING - CCPG1008

FUNDAMENTALS OF DIGITAL DESIGN - CCPG1016

c. This course is a: Required

6. Specific goals for the course

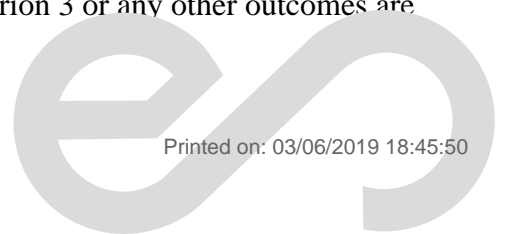
a. Specific outcomes of instruction

1.- To evaluate different technologies and architectures involved in the construction of a computer and its divers external devices for the determination of its performance and productivity.

2.- Understand the process by which a program in high level language is transformed into a set of instructions that the computer can understand in order to determine the advantages and disadvantages of the language

3.- Establish the advantages of one processor with respect to another, considering the design criteria of each technology.

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



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(1) Analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions.

(2) Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline.

7. Brief list of topics to be covered

- 1.- Introduction
- 2.- Instructions set of architecture (ISA) of a computer
- 3.- Arithmetic for computers
- 4.- The processor
- 5.- Memory
- 6.- Parallel processors

