Course Syllabus

FUNDAMENTALS OF DIGITAL DESIGN

Printed by: lisacabe

Program: Computer Science

1. Course number and name

CCPG1016 - FUNDAMENTALS OF DIGITAL DESIGN

2. Credits and contact hours

3 credits and 4 contact hours

3. Instructor's course or coordinator's name

JOSE LUIS ASENCIO MERA

4. Text book, tittle, author, and year

*Brown, Stephen J. & Vranesic, Zvonko G.. Fundamentals of digital logic with verilog design (3rd ed.;)

a.Other supplemental materials

*Tocci, Ronald J.; Widmer, Neal; Moss, Greg. Digital Systems: Principles and Applications (Twelfth Edition)

*THOMAS L. FLOYD. Fundamentos de Sistemas Digitales (9na Edición)

5. Specific course information

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

The Fundamentals of Digital Design course presents an introduction on the basic concepts of digital systems, starting from the mathematical bases for modeling circuits. It also addresses the integration of generic components to build systems of medium complexity. Additionally, concepts of description of systems and digital components are presented using the hardware description language for both the synthesis and the simulation, with a view to a possible implementation in very high speed components and high integration capacity.

b. Prerequisites

PHYSICS II - FISG1002

c. This course is a: Required

6. Specific goals for the course

a. Specific outcomes of instruction

1.- Create the mathematical model of combinatorial and sequential digital components for its implementation in solutions.

2.- Implement basic combinatorial and sequential circuits for the construction of medium complexity digital circuits.

3.- Apply the language of description of very high speed digital hardware VHDL, in the description and simulation of basic digital components and medium complexity.

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

(5) Function effectively as a member or leader of a team engaged in activities appropriate to the program’s discipline.

(7) An ability to lead, manage and undertake projects.

7. Brief list of topics to be covered

1.- Number Systems and Codes
2.- Principles of Logic Design Digital Circuits
3.- Hardware description language VHDL
4.- Combinational Logic Circuits Building blocks
5.- Principles of sequential logic design