Course Syllabus

ANALYSIS OF ALGORITHMS

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Program: Computer Science

1. Course number and name

CCPG1017 - ANALYSIS OF ALGORITHMS

2. Credits and contact hours

3 credits and 3 contact hours

3. Instructor's course or coordinator's name

JOSE LUIS ASENCIO MERA

4. Text book, tittle, author, and year

*Cormen, Thomas H. & Leiserson, Charles Eric & Rivest, Ronald L. & Clifford Stein. Introduction to Algorithms ((hardcover : alk. paper))

a.Other supplemental materials

*Sedgewick, Robert & Kevin Wayne. Algorithms (4th Edition) (Hardcover; 2011-02-14)

5. Specific course information

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

This course introduces the analysis and design of computational algorithms. It addresses formal techniques for determining the efficiency of various algorithms used in solving common problems in the field of computation. The course covers basic algorithm design techniques to adequately address new problems. There is also a discussion on computational complexity and on those problems that may or may not be solved by efficient way through an algorithm.

b. Prerequisites

DATA STRUCTURES - CCPG1006

c. This course is a: Required

6. Specific goals for the course

a. Specific outcomes of instruction

1.- Analyze the asymptotic time of execution of known algorithms through the use of formal notations.

2.- Generate efficient solutions to new problems through the use of algorithm design strategies to optimize your computational resources.

3.- Identify efficient algorithms by evaluating the level of complexity of various computational problems through knowledge of their theory and typology of problems.

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

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

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

7. Brief list of topics to be covered

1.- Introduction to Algorithm Analysis
2.- Algorithm Analysis
3.- Analysis of Remarkable Algorithms
4.- Algorithm Design
5.- Basic Algorithm Design Techniques
6.- Advanced Algorithm Design Techniques
7.- Computational Complexity