Course Syllabus

PROGRAMMING FUNDAMENTALS

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Program: Computer Science

1. Course number and name

CCPG1001 - PROGRAMMING FUNDAMENTALS

2. Credits and contact hours

3 credits and 4 contact hours

3. Instructor's course or coordinator's name

RAFAEL IGNACIO BONILLA ARMIJOS

4. Text book, tittle, author, and year

*Van Rossum, G.. El Tutorial de Python (Primera)

a.Other supplemental materials

*Allen B. Downey, Jeffrey Elkner, Chris Meyers. How to think like a computer scientist: learning with Python (1era Edición)

*Kevin Sheppard. Introduction to Python for econometrics, statistics and data analysis. (2.2.1)

5. Specific course information

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

The course presents students with strategies to solve common problems in various professional fields through the design and implementation of solutions based on the use of a programming language. It covers the basic principles so that the student can read and write programs; emphasizing the design and analysis of algorithms. In addition, it introduces students to the use of development and debugging tools.

b. This course is a: Required

6. Specific goals for the course

a. Specific outcomes of instruction

1.- Apply computational methods to solve problems in their field of study using a programming language

2.- Use computational tools to model and understand data

3.- Apply recipe algorithms in problem solving

4.- Use a development environment to write and debug programs

5.- Use modularization to simplify the structure of a program

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

(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.

(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 programming

2.- Variables and data types

3.- Control structures
4.- List
5.- Ndimensional arrays
6.- Functions
7.- Data collections
8.- Files: Input/Output
9.- Data processing