espol Escuela Superior Politécnica del Litoral

Course Syllabus

PROBLEM SOLVING USING APPLIED COMPUTER SCIENCE

Program: Computer Science

1. Course number and name

CCPG1007 - PROBLEM SOLVING USING APPLIED COMPUTER SCIENCE

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

* Jeanne Liedtka, Andrew King, Kevin Bennett.. Solving Problems with design thinking: Ten stories of what works (Columbia Business School Publishing (Book 2))

a.Other supplemental materials

*Vijay Kumar. 101 Design Methods: A structured approach for driving innovation in your organization. (1st)

*Hasso Plattner. Boootcamp Bootleg (First Edition)

5. Specific course information

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

This course will apply and reinforce the tools and skills needed to find and develop innovative computer solutions to real-life problems associated with a community an institution or a company. This course will use tools and concepts from the Design Thinking methodology to solve problems. Additionally, hardware and software prototyping tools will be used. Initially, problems to be solved will be defined, where the conformed teams will look for solutions and design prototypes that will be presented to the possible beneficiaries and validated by them, throughout the course.

b.   Prerequisites

PROBLEM SOLVING - INDG1001

c.   This course is a: Required

6. Specific goals for the course

a.   Specific outcomes of instruction

1.- Identify problems at the local scope using the design thinking methodology for understanding the relevance of computer science.

2.- Propuse differents solutions using diverses systematic and methodological processes of design thinking, through the use of knowledge of computer science in benefit of society needs.

3.- Develop medium or high fidelity prototypes using rapid prototyping techniques for the creation of effective and innovative solutions.

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

(3) Communicate effectively in a variety of professional contexts.

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

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7. Brief list of topics to be covered

1.- Analysis and Problem solving

2.- Understanding the user's needs

3.- Definition of the problem

4.- Generation of ideas

5.- Prototyping tools

6.- Validation and Tests