ESCUELA SUPERIOR POLITÉCNICA DEL LITORAL
COURSE SYLLABUS
SOFTWARE DESIGN

Program: Computer Science

1. Course number and name
CCPG1009 - SOFTWARE DESIGN

2. Credits and contact hours
3 credits and 4 contact hours

3. Instructor's course or coordinator's name
DAVID ALONSO JURADO MOSQUERA

4. Text book, tittle, author, and year
*Alan Shalloway, James R. Trott. Design Patterns Explained: A new perspective on object oriented (Second Edition)

a.Other supplemental materials

*Martin Fowler. Refactoring: Improving the Design of Existing Code (1st Edition)

*Martin Fowler. UML Distilled: A Brief Guide to the Standard Object Modeling Language (3rd Edition)

*Erich Gamma, Richard Helm, Ralph Johnson, John Vlissides. Design Patterns: Elements of Reusable Object-Oriented Software (1st Edition)

5. Specific course information
a.   Brief description of the content of the course (catalog description)

The course shows the principles of software design to the students as a fundamental stage in the problem solving process. Students use different paradigms, patterns and modeling techniques in a project development that match the requirement specifications, resulting in a software product with quality. In addition, the course introduces the use of project development tools, control versioning and frameworks for validating software products.

b.   Prerequisites

OBJECT ORIENTED PROGRAMMING - CCPG1005

c.   This course is a: Required

6. Specific goals for the course
a.   Specific outcomes of instruction

1.- Design a software product that apply design principles for robustness and easy maintenance.

2.- Build appropriate models that match the requirements specifications, for the creation of a software product.

3.- Describe how and when refactoring is applied to simplify the future maintenance of the source code.

4.- Use computer tools in the development of unit tests, for the validation of a software product.

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

7. Brief list of topics to be covered

Program: Computer Science

1.- Introduction

2.- Design paradigms

3.- Object oriented design

4.- Refactoring

5.- Design patterns

6.- Unit tests