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Actuarial valuation tools

Academic Year: (2019 / 2020)   **Review date: 07/05/2020 19:53:40**

Department assigned to the subject: Business Administration Department

Coordinating teacher: USABEL RODRIGO, MIGUEL ARTURO

Type: Compulsory ECTS Credits : 6.0

Year : 1 Semester : 2

OBJECTIVES

Learning objectives
 The student will be able to program and use the main analytics and actuarial calculation languages and tools
Learning outcomes
a)	Understanding an object-oriented programming language environment
b)	Master the development of actuarial calculation using functions and subroutines
c)	Design and end-to-end programming of actuarial calculus tools.
d)	Understanding the data base engine language SQL
e)	Understanding the basis of Python programming language as a platform to support various software tools.

Learning skills
a)	Analysis and synthesis
b)	Problem solving approach
c)	Work team player.
d)	Critical reasoning
e)	Written and verbal communication

DESCRIPTION OF CONTENTS: PROGRAMME

I.	VBA
a.	Programming environment
b.	Variables and types. Matrices and arrays. Conditional and loops.
c.	Functions and Subroutines.
d.	Design of user forms and interfaces.
e.	Pseudo-code, use cases and design of applications.
f.	Advances topics
II.	SQL
a.	Programming environment
b.	Main types of query.
III.	Intro to Python.
a.	Programming environment
b.	Examples of efficient use of Python

LEARNING ACTIVITIES AND METHODOLOGY

TEACHING METHODOLOGY
I.	THEORETICAL CONTENTS
a.	Classroom interactive work.
b.	Web based materials and handouts
c.	Tutorial work.
d.	Recommended international bibliography.
e.	Office hours and email interaction.

II.   PRACTICE
a.   Examples and exercises and previous exams classroom solving.
b.   Daily students¿ involvement and presentations.
c.   Computer work.
d.   Debates and bringing up different standpoints on topics. Critical thinking.

ASSESSMENT SYSTEM

The final mark will be based on an actuarial software group project, topic to be chosen by the student, addressing some theoretical and mainly practical issues. The project will be presented to a panel of experts
 However, previous to be accepted, the student should pass a personal exam proving programming skills in VBA and SQL.

BASIC BIBLIOGRAPHY

 - John Walkenbach Excel 2010. Programación con VBA, Anaya Multimedia.