Universitat Autònoma de Barcelona

2019/2020

Introduction to Programming

Code: 104850
ECTS Credits: 6

Degree	Type	Year	Semester
2503852 Applied Statistics	FB	1	2

Contact

Name: Vicente Soler Ruíz
Email: Vicenc.Soler@uab.cat

Use of Languages

Principal working language: catalan (cat)
Some groups entirely in English: No
Some groups entirely in Catalan: Yes
Some groups entirely in Spanish: No

Prerequisites

None

Objectives and Contextualisation

Learn to develop a computer program.

Create and design computer algorithms that allow the resolution of problems with structured programming.

Use the Python programming language as the language used to develop the exercises.

Competences

- Make efficient use of the literature and digital resources to obtain information.
- Students must be capable of applying their knowledge to their work or vocation in a professional way and they should have building arguments and problem resolution skills within their area of study.
- Use quality criteria to critically assess the work done.
- Use software for statistical analysis, numerical and symbolic analysis, graphic visualisation, optimisation or others, to solve problems.

Learning Outcomes

1. Critically assess the work done on the basis of quality criteria.
2. Make effective use of references and electronic resources to obtain information.
3. Students must be capable of applying their knowledge to their work or vocation in a professional way and they should have building arguments and problem resolution skills within their area of study.
4. Use Functional Programming.

Content

1. Introduction: variables, instructions, data types and algorithms
2. Conditionals and operators

3. Loops
4. Unidimensional and n-dimensional arrays: lists, dictionaries and tuples in Python
5. Functions and their parameters
6. Files
7. Classes
8. Design and development of an application

Methodology

Each theory session will have its practical session, where students will be proposed to apply the concepts learnt developing some computer programs in Python.

The student will be provided of some notes with solved exercises that will help him/her follow the syllabus every week.

Activities

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Lectures of problems	15	0.6	1, 3, 4
Lectures of theory	15	0.6	1, 3, 4
Type: Supervised			
Lectures of practices	30	1.2	1, 3, 2, 4
Type: Autonomous			
Personal work	77	3.08	1, 3, 2, 4

Assessment

The assessment is done through two partial exams: a mid-term exam and another at the end. To pass the subject, an average of 5 of the two exams must be taken, and a minimum of 4 in each of them.

If the subject is not passed, you can go to a resit exam.

Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Mid-Term exam	50%	4	0.16	1, 3, 2, 4
Resit exam	100%	5	0.2	1, 3, 2, 4
Second Exam	50%	4	0.16	1, 3, 2, 4

Bibliography

- Mark Lutz, "Learning Python", Ed. O'Reilly

-"Python tutorial", https://www.tutorialspoint.com/python/