



Universitat de Lleida

DEGREE CURRICULUM **PROGRAMMING AND COMMUNICATIONS III**

Coordination: GUITART BRAVO, FRANCESC JOSEP

Academic year 2019-20

Subject's general information

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|--|---|--------|-----------|------------------|
| Subject name | PROGRAMMING AND COMMUNICATIONS III | | | |
| Code | 102135 | | | |
| Semester | 2nd Q(SEMESTER) CONTINUED EVALUATION | | | |
| Typology | Degree | Course | Character | Modality |
| | Bachelor's Degree in Automation and Industrial Electronic Engineering | 4 | OPTIONAL | Attendance-based |
| Course number of credits (ECTS) | 6 | | | |
| Type of activity, credits, and groups | Activity type | PRAULA | TEORIA | |
| | Number of credits | 3 | 3 | |
| | Number of groups | 1 | 1 | |
| Coordination | GUITART BRAVO, FRANCESC JOSEP | | | |
| Department | COMPUTER SCIENCE AND INDUSTRIAL ENGINEERING | | | |
| Important information on data processing | Consult this link for more information. | | | |
| Language | English | | | |
| Office and hour of attention | Teaching by CCIA professor in hiring process. | | | |

| Teaching staff | E-mail addresses | Credits taught by teacher | Office and hour of attention |
|-------------------------------|--------------------------|---------------------------|------------------------------|
| GUITART BRAVO, FRANCESC JOSEP | francesc.guitart@udl.cat | 7,2 | |

Learning objectives

Programming applications on SBC platforms (such as the Raspberry Pi) to develop sensor using and network accessible applications.

Competences

Specific

Basic knowledge of the use and programming of computers, operating systems, databases and computer programs with applications in engineering.

Applied knowledge of industrial computing and communications.

Knowledge of the basics of the applications and computer systems.

General

To have the skills required to undertake new studies or improve the training with self-direction.

Capacity for unidisciplinary and multidisciplinary teamwork.

Strategic of the University

Command of a foreign language.

Mastering ICT's.

Subject contents

- Introduction to computer networks:
 - OSI / ISO layer models
 - TCP / IP model.
- Introduction to IP.
- Introduction to TCP.
- Introduction to HTTP.
- Web Application Development
- Python web servers

Methodology

Lectures.

Development (with Programació i Comunicacions II) of a complex project.

Development of small mini projects and small parts of the whole project.

Evaluation

Project-based learning (together with Programació i Comunicacions II). Those students not attending PiC2, will only develop a part of the project.

Bibliography

Documentation and examples in the virtual campus.

<http://appinventor.mit.edu/explore/get-started>

<http://appinventor.mit.edu/explore/ai2/tutorials>

Think Python - Allen B. Downey (<http://www.greenteapress.com/thinkpython/>)

Learn Python the Hard Way - Zed Shaw (<http://learnpythonthehardway.org/>)