Universidad Rey Juan Carlos

TEACHING GUIDE

PROGRAMMING IN NETWORK ENVIRONMENTS

GRADO EN INGENIERÍA BIOMÉDICA (INGLÉS)

ACADEMIC YEAR 2019-20

Date: 11-07-2019

I.-Subject Identification	
Type	OBLIGATORIA
Teaching period	1 course, 2Q semester
Nº of credits	6
Language in wich the subject is taught	English

II.-Presentation

The subject will train the student in the different techniques of programming of computerized systems in network, in the field of Biomedicine.

III.-Competences

Generic competences

Specific competences

CE11 - To identify, use and adapt telecommunication technologies that offer rational solutions to biomedical engineering problems.
CE19 - To use the fundamentals of programming for the development of computer programs in modern programming languages, as well as understand and use different operating systems, databases and hospital information systems. Apply them in networks, systems and telematic services for hospital management.

IV.-Contents

IV.A.-Syllabus

1. Tools: Python3, Pycharm, Github
2. Introduction to object-oriented programing
3. Network services models
4. Comunication Protocols Programming (TCP/HTTP)
5 .Web Application Programming
6. Final project

IV.B.-Training activities

Type	Title
Laboratories	Practices for topic 1
Laboratories	Practices for topic 2
Laboratories	Practices for topic 3
Laboratories	Practices for topic 4
Laboratories	Practices for topic 5
Others	Master classes for topics 1-5

V.-Student worload	
Lecture classes	18
Pratical classes/problem-solving, case studies, etc.	2
Practical sessions in technological laboratories, hospitals, etc.	24
Tests	16
Academic tutorials	2
Related activities: conferences, seminars, etc.	16
Preparation of lecture classes	70
Preparation of practical classes, problem-solving, case studies,etc.	14
Test preparation	18
Total student workload	180

VI.-Teaching Methodology and Organisation

Type	Period	Content
Academic Tutorials	Week 1 to Week 14	Topics 1-5
Theoretical classes	Week 1 to Week 1	topics 1
Laboratories	Week 1 to Week 1	topics 1
Theoretical classes	Week 2 to Week 2	topic 2
Laboratories	Week 2 to Week 2	topic 2
Theoretical classes	Week 3 to Week 4	topic 3
Laboratories	Week 3 to Week 4	topic 3
Theoretical classes	Week 5 to Week 8	topic 4
Laboratories	Week 5 to Week 8	topic 4
Theoretical classes	Week 9 to Week 10	topic 5
Laboratories	Week 9 to Week 10	topic 5
Group work	Week 10 to Week 14	topics 6
Laboratories	Week 10 to Week 14	topics 6

VII.-Assessment methods

VII.A.-Continuous assessment

Regular Evaluation:: If the teacher requires mandatory attendance, it should be precisely specified.
(Note: to avoid admitting a student to an exam who does not meet the minimum attendance requirement, professor must prove so by means of the use of a probative system, such as a signature sheet or the attendance control system available via the Virtual Classroom).
The distribution and characteristics of the assessment tests are those described below. Only in exceptional and especially justified cases may the professor introduce adaptations to the Guide. Said changes will require, after consulting the Head of the Course, the express prior authorisation of the Coordinator of the Degree Programme, who shall notify the Vice-Chancellor responsible for Academic Planning of the change made. In any event, the amendments proposed must follow what is established in the verified memory. For said changes to be effective, they must be duly communicated at the start of the course to the students through the Virtual Classroom.
In general, the sum of activities that cannot be ?re-evaluated? may not exceed the 50% of the final mark of the course and they may not have a minimum mark. This criteria will not be applicable in the case of laboratory or clinical internships, when duly justified.
Extraordinary Evaluation: Those students who have not succeeded at the ordinary assessment, or have not taken the subject exams, will have to do a make-up exam to verify the acquisition of the tasks set out in the guide.

Description of the tests for assessment and their weights.

• Written exam on the concepts of the subject: 40% of the final score
•Memory and presentation of practices: 60% of the final score

VII.B. Evaluation of Students with Academic Exemption

To be assessed using this method, the student should obtain Academic Exemption for the subject, applying for it to the Dean or Director of the Faculty/School in which the subject is taught. 'Academic Exemption' may be granted only if the characteristics of the subject allow so. Once the granting of Academic Exemption has been notified, the professor must inform the student through the Virtual Classroom about the assessment plan established in each case.

Academic Exemption possible in this subject: Yes

VII.C. Revision of examinations

In accordance with the regulation of examination revision of the University Rey Juan Carlos.

VII.D.-Disabled students or students with special needs

The Assistance for the Disabled Service, according to the regulations of this Service, approved by the Governing Council of the Rey Juan Carlos University, will provide the guidelines for the curricular adaptations for students with disabilities or special needs, in order to guarantee equal opportunities, non-discrimination, universal accessibility and better academic success.
For this reason, this University is required to issue a report of curricular adaptations. In order to do so, disabled students or students with special needs must contact this service to analyze different alternatives.

VII.E.-Rules of Conduct

Rules of Conduct

VII.-Bibliography

Referecence Generic

Mark Lutz
Programming Python, 4th Edition
O'Reilly Media,2010

Mitchell L Model.
Bioinformatics programming using python.
O'Reilly 2009

Reference literature

Jason M. Kinser
Python for Bioinformatics
Jones and Bartlett, 2008

IX.-Lecturers/Teachers/Professors

Lecturer/teacher/professor´s name	JUAN GONZALEZ GOMEZ
E-mail address	juan.gonzalez.gomez@urjc.es
Department/field	Teoría de la Señal y las Comunicaciones y Sistemas Telemáticos y Computación
Category	Profesor Ayudante Doctor
Academic qualifications	Doctor
Subject Coordinator	Yes
Academic tutorial timetable	Para consultar las tutorias póngase en contacto con el/la profesor/-a a través de correo electrónico
Nº of Quinquenios	0
Nº of Sexenio	0
Stretch Docentia	0