17837 - COMPUTER SYSTEMS PROJECT

Information of the subject

Code - Course title: 17837 - COMPUTER SYSTEMS PROJECT

Degree: 473 - Graduado/a en Ingeniería Informática
474 - Graduado/a en Ingeniería Informática y Matemáticas
722 - Graduado/a en Ingeniería Informática
734 - Graduado/a en Ingeniería Informática y Matemáticas (2019)

Faculty: 350 - Escuela Politécnica Superior

Academic year: 2020/21

1. Course details

1.1. Content area

Sistemas operativos, redes y sistemas informáticos

1.2. Course nature

Compulsory

1.3. Course level

Grado (EQF/MECU 6)

1.4. Year of study

734 - Graduado/a en Ingeniería Informática y Matemáticas (2019): 4
722 - Graduado/a en Ingeniería Informática: 3
474 - Graduado/a en Ingeniería Informática y Matemáticas: 4
473 - Graduado/a en Ingeniería Informática: 3

1.5. Semester

First semester

1.6. ECTS Credit allotment

3.0

1.7. Language of instruction

Español, English

1.8. Prerequisites

None

1.9. Recommendations

This course assumes that the student has already acquired basic knowledge in data bases (**Estructuras de datos.**) and structured programing (**Análisis y diseńo de software** y **Proyecto de análisis y diseńo de software**)

1.10. Minimum attendance requirement

Attendance of at least 85% of the classes is compulsory.

1.11. Subject coordinator/s

Roberto Marabini Ruiz

https://autoservicio.uam.es/paginas-blancas/

1.12. Competences and learning outcomes

1.12.1. Competences

IS2. Ability to assess client needs and specify the software requirements to satisfy them, reconciling conflicting aims via the search for compromises that are acceptable within the limitations derived from cost, time, the existence of already developed systems and the organisations themselves.
IC4. Ability to design and implement system and communications software.
SI3. Ability to actively participate in the specification, design, implementation and maintenance of information and communications system.

1.12.2. Learning outcomes

design and develop Web sites
use de paradigm MVC in web design
use django **Web** develop framework

1.12.3. Course objectives

UNIT BY UNIT SPECIFIC OBJECTIVES	
UNIT 1.- **Setting up the Development Environment**	
1.	Language: Python
2.	Version control tools: GIT
3.	IDE: PyChram
UNIT 2.- Introduction to web application development using DJango	
2.1.	Model–view–controller (MVC) architecture
2.2.	Create database models and use the object relational mapping functionality.
2.3.	Work with *Model-View-Template* design pattern
2.4	Static Data and templates
UNIT 3.- Design and development of Web Services	
3.1.	Know the functionality and necessary component for Web Services Design and Implementation.

3.2.	Deploy applications in commercial web sites
3.3.	Include more advanced functionality like *AJAX*.

1.13. Course contents

1. **Setting up the Development Environment**
    1. Language: Python
    2. Version control tools: GIT
    3. IDE: PyChram
2. **Introduction to web application development using DJango**
    1. Model–view–controller (MVC) architecture
    2. Create database models and use the object relational mapping functionality.
    3. Work with *Model-View-Template* design pattern
    4. Static Data and templates
3. **Design and development of Web Services**
    1. Know the functionality and necessary component for Web Services Design and Implementation..
    2. Deploy applications in commercial web sites
    3. Include more advanced functionality like *AJAX*.

1.14. Course bibliography

1. DJango Introduction: http://www.tangowithdjango.com/book17/index.html
2. Python Introduction: https://developers.google.com/edu/python/

2. Teaching-and-learning methodologies and student workload

2.1. Contact hours

	#horas
Contact hours (minimum 33%)	30
Independent study time	45

2.2. List of training activities

Activity	# hours
Lectures	
Seminars	
Practical sessions	
Clinical sessions	
Computer lab	28
Laboratory	
Work placement	
Supervised study	
Tutorials	
Assessment activities	2
Other	

3. Evaluation procedures and weight of components in the final grade

3.1. Regular assessment

- Students should handle four assignments (called A1, A2, A3 and A4). The first two ones will be marked as "pass" or "fail". The rest will be marked up to 10.
- In addition to the assignments there will be two exams that will cover the subjects introduced in A1 and A2 and further developed in A3 and A4. We will call examA1 to the exam mainly related with A1 and examA2 to the exam mainly related with A2. ExamA1 will be marked as "pass" or "fail"., examA2 will be marked up to 10.
- In order to pass the course, it is mandatory to obtain a mark of 5 or better in A3, A4 and examA2 plus the mark "pass" in the assignment called A1, A2 and the examA1. If not, the mark will be min(4.9, Final Mark)
- The mark of the course is obtained using the following equation:

Assignments : 0.45*A3 + 0.55*A4

grade: 0.8*Assignment + 0.2*Final exam

- The marks (assignments or final exam) are kept only for the June exam of the same academic year.

3.1.1. List of evaluation activities

Evaluatory activity	%
Final exam	20
Continuous assessment	80

3.2. Resit

The "Resit" students should present the same material project than the "Regular assessment" plus a small extra requirement. They should also take both exams (examA1 and examA2).

In order to pass the course, it is mandatory to obtain a mark of 5 or better in the project and examA2 plus the mark "pass" in the examA1. If not, the mark will be min(4.9, Final grade)

The teacher may ask the "Resit" students details about their assignments

Equation for computing the grades follows:

final grade: 0.8*projectGrade + 0.2*examA2

3.2.1. List of evaluation activities

Evaluatory activity	%
Final exam	20
Continuous assessment	80

4. Proposed workplan

Week	Content	In-class Hours	Out-class Hours
1	**- Unit 1 Setting up the Development Environment 1.1, 1.2 y 1.3** - Assignment 1	2	3 Study and understand assignment 0 guide. Implement assignment 1
2	**- Unit 1 Setting up the Development Environment 1.1, 1.2 y 1.3** - Assignment 1	2	3 Implement assignment 1

Week	Content	In-class Hours	Out-class Hours
3	**- Unit 2 Introduction into Web development using DJango 2.1, 2.2 y 2.3** - Assignment 2	2	3 Study and understand assignment 2 guide. Implement assignment 2
4	**- Unit 2 <u>Introduction into Web development using DJango 2.1, 2.2 y 2.3</u>** - Assignment 2	2	3 Implement assignment 2
5	**- Unit 2 <u>Introduction into Web development using DJango 2.1, 2.2 y 2.3</u>** - Assignment 2	2	3 Implement assignment 2
6	**- Unit 2 Introduction into Web development using DJango 2.4** - Assignment 3	2	3 Study and understand assignment 3 guide.
7	**- Unit 3 Design and development of Web Servers 3.1,3.2** - Assignment 3	2	3 Implement assignment 3 Implement assignment 2
8	**- Unit 3 Design and development of Web Services 3.3** - Assignment 3	2	3 Implement assignment 2
9	**- Unit 3 Design and development of Web Services 3.3** - Assignment 3	2	3 Implement assignment 3
10	**- Unit 3 Design and development of Web Services 3.3** - Assignment 3	2	3 Study and understand assignment 3 guide. Implement assignment 3
11	**- Unit 4: implement application business logic** - Assignment 4	2	3 Implement assignment 4
12	**- Unit 4 implement application business logic** - Assignment 4	2	3 Implement assignment 4
13	**- Unit 4 implement application business logic**	2	3 Implement assignment

Week	Content	In-class Hours	Out-class Hours
	- Assignment 4		4
14	- Assignment 4 Revision	2	3 assignment 4 presentation
15	**Practical Exam in laboratory**	2	3
	Exam	0	0h