

ADVANCED SOFTWARE DEVELOPMENT

34019 - ADVANCED SOFTWARE DEVELOPMENT (2024-25)

General

Code: 34019

Lecturer responsible:

GARRIGOS FERNANDEZ, IRENE

Credits ECTS:	6,00
Theoretical credits:	1,20
Practical credits:	1,20
Distance-base hours:	3,60

Departments involved

- **Dept:** LANGUAGES AND COMPUTING SYSTEMS

Area: LANGUAGES AND COMPUTING SYSTEMS

Theoretical credits: 1,2

Practical credits: 1,2

This Dept. is responsible for the course.

This Dept. is responsible for the final mark record.

Study programmes where this course is taught

- [DOUBLE DEGREE IN COMPUTER ENGINEERING AND BUSINESS ADMINISTRATION](#)

Course type: COMPULSORY (Year: 3)

- [DEGREE IN COMPUTER ENGINEERING](#)

Course type: COMPULSORY (Year: 2)

Competencies and objectives

Course context for academic year 2024-25

This subject helps the student to develop applications in a simple and efficient way. The student will learn programming concepts for developing graphical applications, and will use tools for that aim. S/he will have to do individual assignments as well as a group assignment consisting on a Web application.

In the development of the Web application the student will learn how to plan and organize projects, and will understand the importance of effective working techniques, negotiating with the others members of the group and communication and leadership abilities. The students will apply the teoretical concepts explained: designing a Web application in a efficient way using libraries for their reuse, connecting the application with a database and using a control version system.

Students have already done the subjects of the first course (P1, P2) that explain the basics of programming. The concepts explained in the subject 'Fundamentos de las Bases de Datos' are also needed to have the knowledge in order to connect the project with a database. In the second course P3 explains the concepts needed to understand the object oriented programming paradigm, and the subject 'Diseño de bases de datos'.

Course content (verified by ANECA in official undergraduate and Master's degrees) for academic year {0}

Specific Competences (CE)

- **CE12** : Coneixement i aplicació de les característiques, funcionalitats i estructura de les bases de dades, que permeten el seu adequat ús, i el disseny i l'anàlisi i implementació d'aplicacions basades en ells.
- **CE13** : Coneixement i aplicació de les eines necessàries per a l'emmagatzematge, processament i accés als sistemes d'informació, incloent-hi els basats en web.
- **CE17** : Capacitat per a dissenyar i avaluar interfícies persona computador que garantisquen l'accessibilitat i usabilitat als sistemes, serveis i aplicacions informàtiques.
- **CE8** : Capacitat per a analitzar, dissenyar, construir i mantenir aplicacions de forma robusta, segura i eficient, triant el paradigma i els llenguatges de programació més adequats.

Exclusive skill taught in this course

No data

Learning outcomes (Training objectives)

No data

Specific objectives stated by the academic staff for academic year 2024-25

-Use current tools for the design and programming of applications.

-Involve the student in developing a real software application.

-To know and handle the problems arising from the development of a large application in a workgroup.

Content and bibliography

Content for academic year 2024-25

Unit 1 Fundamentals of the programming language

Unit 2 Version control systems

- What is a version control system? Basic concepts and history.
- Centralized and distributed systems.
- Collaboration mode between developers +centralized'+distributed

Unit 3 Event driven programming and deferred code execution

- Definition of event
- Event types
- Event waiting loop
- What is deferred code execution
- Callback concept

Unit 4 Graphical user interfaces

- How to build the u.i. of an application.

Unit 5 DDBB access from desktop applications: layered model.

- Use of relational DDBB in desktop applications.
- Brief introduction to the layered model.

Unit 6 Object code reuse: libraries

- What is a library?
- How are they created?. Types of libraries (static and dynamic links).
- How are they used?

Unit 7: Basic aspects of the design and develop of Web applications

- Introduction to C#.
- Development phases of a Web project. Architecture of a Web application
- Web application types.
- Creation and development of a Web application
- Concepts needed for the development of a Web application.

Unit 8 Database access using an object model

- Layered architecture. Business entities and data access components.
- Environment types. Object model.
- Connected environment
- Disconnected environment. Concurrency types

Unit 9 Effective presentations

- Content to include in a computer science project presentation
- Organization of the content
- Suggestions when doing the oral presentation.

Related links

No data

Bibliography

Foundations of GTK+ development

Author(s): Krause, Andrew

Issue: Berkeley : Apress, 2007;

ISBN: 978-1-59059-793-4

Category: Sin especificar

Professional ASP.NET 3.5 AJAX

Author(s): Evjen, Bill

Issue: West Sussex (Reino Unido) : John Wiley & Sons, 2011;

ISBN: 978-0-470-39217-1

Category: Sin especificar

Assessment procedures and criteria 2024-25

▪ **First evaluation period: continuous assessment (C3)**

Final mark= PRACTICAL Mark(PP 25%+ PG 35%)+ THEORY Mark (ET 40%)

PI: assignments in pairs, PG: group assignment, ET: Theoretical exam

- To be able to average and pass the subject in the C3 call the student must have a minimum grade of 4 in the assignments, and a minimum grade of 4 in the Theory exam (ET).
- If the student does not exceed one of the fixed minimums his/her grade will be the minimum value between the final grade obtained as indicated above and the value 4.
- The passing will be obtained when the final mark is equal to or greater than 5.
- If the student has not obtained a qualification in any of the evaluation activities, the student will be qualified as "without presence"

- It is compulsory to attend practical classes. A maximum of 20% absences are allowed without justification. To overcome them automatically, the student will fail the subject.
- It is mandatory to attend the correction of the group assignment, as well as the oral presentation of the same. Otherwise, the student will automatically fail these parts.

▪ **Second evaluation period (C4)**

If the student does not pass the subject in C3, it must be examined in the C4 call of the recoverable parts (see below) that has not passed and whose grade is less than 4.

As in the call C3, if the student does not exceed one of the fixed minimums his grade will be the minimum value between the final grade obtained as indicated above and the value 4.

The passing will be obtained when the final mark is equal to or greater than 5.

If the student has not obtained a qualification in any of the evaluation activities, the student will be qualified as "without presence".

Extraordinary call at December (C1)

In the special call for December (C1) the evaluation will consist of a test that will cover both theoretical and practical knowledge.

Copies and plagiarisms

In case of plagiarism, the qualification of the people involved (those who copy and those who facilitate the copy) will be of ZERO in the corresponding evaluation activity and will lose the privilege of not having to repeat the parts already surpassed for the call C4. In addition, the department and EPS management will be informed of this incident. The reiteration in the behavior in this or other subject will entail the notification to the corresponding vice-rector of the faults committed so that they study the case and proceed to sanction the student as dictated the current university regulations. (**Regulation of academic discipline of officers Centers Higher Education and Technical Education under the Ministry of education BOE 12/10/1954**) .

Description	Criteria	Type	Weighting system
Group assignment	A web application will be done in a collaborative group, which will be delivered at the end of the course. In addition the students must make a public presentation of this application. This evaluation activity will not be recoverable due to its characteristics: group work, ongoing assessment, etc	ACTIVITIES OF EVALUATION DURING THE SEMESTER	35
Assignments in pairs	There will be assignments in pairs that will cover the contents of the subject. This evaluation activity will be recoverable through a practical exam in the C4 call.	ACTIVITIES OF EVALUATION DURING THE SEMESTER	25
THEORY EXAM	A theoretical examination of the subject will be carried out to evaluate the students' knowledge individually, on the official date assigned by the Polytechnic School. This evaluation activity will be recoverable.	FINAL TEST	40

Official exam dates for academic year 2024-25

Exam session	Date	Time	Group - Classroom(s) allocated	Comments
(C3) Periodo ordinario para asignaturas de segundo semestre y anuales	28/05/2025			Teoría
(C4) Pruebas extraordinarias para asignaturas de grado y máster	14/07/2025			Teoría
	14/07/2025			Prácticas

Academic staff



GARRIGOS FERNANDEZ, IRENE
Lecturer responsible

THEORY CLASS: Groups: 1 , 2 , 3 , 40 , 4
COMPUTER PRACTICALS: Groups: 03



BERNABEU MANSILLA, RAUL

THEORY CLASS: Groups: 4
COMPUTER PRACTICALS: Groups: 04



GONZALEZ MORA, CESAR

THEORY CLASS: Groups: 3



MORAN PRESA, ANGEL

COMPUTER PRACTICALS: Groups: 05 , 401 , 07



SANCHIS BERNABEU, FRANCISCO JAVIER

THEORY CLASS: Groups: 40
COMPUTER PRACTICALS: Groups: 01 , 02



SEMPERE PEREZ, HECTOR

COMPUTER PRACTICALS: Groups: 04 , 05 , 06

Groups

THEORY CLASS

Group	Semester	Morning or afternoon session	Language	No. of enrolled students	
Gr. 1 (THEORY CLASS) : 1	2S	Morning	Spanish	106	<ul style="list-style-type: none">Allowed DEGREE IN COMPUTER ENGINEERING
Gr. 2 (THEORY CLASS) : 2 (ARA)	2S	Morning	English	29	<ul style="list-style-type: none">Allowed INTERNATIONAL MOBILITY PROGRAMMEAllowed DEGREE IN COMPUTER ENGINEERING
Gr. 3 (THEORY CLASS) : 3 VAL	2S	Afternoon	Valencian	24	<ul style="list-style-type: none">Allowed DEGREE IN COMPUTER ENGINEERING
Gr. 4 (THEORY CLASS) : 4	2S	Afternoon	Spanish	65	<ul style="list-style-type: none">Allowed DEGREE IN COMPUTER ENGINEERING
Gr. 40 (THEORY CLASS) : 40 I2ADE	2S	Morning	Spanish	39	<ul style="list-style-type: none">Allowed VISITING STUDENT EEESAllowed VISITING STUDENT NO EEESAllowed INTERNATIONAL MOBILITY PROGRAMMEAllowed DOUBLE DEGREE IN COMPUTER ENGINEERING AND BUSINESS ADMINISTRATION

COMPUTER PRACTICALS

Group	Semester	Morning or afternoon session	Language	No. of enrolled students	
Gr. 01 (COMPUTER PRACTICALS) : 1	2S	Morning	Spanish	35	<ul style="list-style-type: none">Allowed DEGREE IN COMPUTER ENGINEERING
Gr. 02 (COMPUTER PRACTICALS) : 2	2S	Morning	Spanish	36	<ul style="list-style-type: none">Allowed DEGREE IN COMPUTER ENGINEERING
Gr. 03 (COMPUTER PRACTICALS) : 3 (ARA)	2S	Morning	English	29	<ul style="list-style-type: none">Allowed INTERNATIONAL MOBILITY PROGRAMMEAllowed DEGREE IN COMPUTER ENGINEERING
Gr. 04 (COMPUTER PRACTICALS) : 4 VAL	2S	Afternoon	Valencian	24	<ul style="list-style-type: none">Allowed DEGREE IN COMPUTER ENGINEERING
Gr. 05 (COMPUTER PRACTICALS) : 5	2S	Afternoon	Spanish	32	<ul style="list-style-type: none">Allowed DEGREE IN COMPUTER ENGINEERING









Group	Semester	Morning or afternoon session	Language	No. of enrolled students	
Gr. 06 (COMPUTER PRACTICALS) : 8	2S	Afternoon	Spanish	34	<ul style="list-style-type: none"> ▪ Allowed DEGREE IN COMPUTER ENGINEERING
Gr. 07 (COMPUTER PRACTICALS) : 7	2S	Afternoon	Spanish	34	<ul style="list-style-type: none"> ▪ Allowed DEGREE IN COMPUTER ENGINEERING
Gr. 401 (COMPUTER PRACTICALS) : 40 I2ADE	2S	Morning	Spanish	20	<ul style="list-style-type: none"> ▪ Allowed DOUBLE DEGREE IN COMPUTER ENGINEERING AND BUSINESS ADMINISTRATION ▪ Allowed VISITING STUDENT EEES ▪ Allowed VISITING STUDENT NO EEES ▪ Allowed INTERNATIONAL MOBILITY PROGRAMME
Gr. 402 (COMPUTER PRACTICALS) : 402	2S	Morning	Spanish	19	

Timetables

THEORY CLASS

Group	Start date	End date	Day	Start time	End time	Lecture room
1	27/01/2025	23/05/2025	VIE	09:00	11:00	A3/0008 
2	27/01/2025	23/05/2025	MIE	09:00	11:00	A3/0007 
3	27/01/2025	23/05/2025	VIE	15:00	17:00	A3/0011 
4	27/01/2025	23/05/2025	MIE	17:00	19:00	A3/0008 
40	27/01/2025	23/05/2025	JUE	09:00	11:00	A2/E11 

COMPUTER PRACTICALS

Group	Start date	End date	Day	Start time	End time	Lecture room
01	27/01/2025	23/05/2025	MAR	11:00	13:00	0039PB056 
02	27/01/2025	23/05/2025	VIE	11:00	13:00	0039PB010 
03	27/01/2025	23/05/2025	MIE	11:00	13:00	0039PB055 
04	27/01/2025	23/05/2025	VIE	17:00	19:00	0039PB011 
05	27/01/2025	23/05/2025	MIE	19:00	21:00	0039PB010 
06	27/01/2025	23/05/2025	LUN	15:00	17:00	0039PB010 
07	27/01/2025	23/05/2025	MAR	15:00	17:00	0039PB010 
401	27/01/2025	23/05/2025	VIE	13:00	15:00	0016P2003 
402	27/01/2025	23/05/2025	VIE	13:00	15:00	0016P1002 