COURSE DESCRIPTION

COURSE DETAILS

Title (of the course): **PROGRAMACIÓN WEB**

Code: 101400

Degree/Master: **GRADO DE INGENIERÍA INFORMÁTICA**   Year: 3

Name of the module to which it belongs: OBLIGATORIO TECNOLOGÍA INFORMÁTICA

Field: PROGRAMACIÓN WEB

Character: OBLIGATORIA   Duration: FIRST TERM

ECTS Credits: 6.0   Classroom hours: 60

Face-to-face classroom percentage: 40.0%   Study hours: 90

Online platform: http://moodle.uco.es/moodlemap/

LECTURER INFORMATION

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Department: INFORMÁTICA Y ANÁLISIS NUMÉRICO

Area: CIENCIA DE LA COMPUTACIÓN E INTELIGENCIA ARTIFICIAL

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PREREQUISITES AND RECOMMENDATIONS

Prerequisites established in the study plan

None

Recommendations

It is recommended to have passed the following courses or, at least, to have sufficient understanding of them:

* Metodología de la programación

* Programación orientada a objetos

* Bases de datos

* Estructuras de datos

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INTENDED LEARNING OUTCOMES

CB4	To make students able to share information, ideas, problems and solutions with an audience of specialists and non-specialists
CTEIS1	Ability to develop, maintain and evaluate software services and systems to meet all user requirements and behave reliably and efficiently, are affordable to develop and maintain and comply with quality standards, applying the theories, principles, methods and practices Software Engineering.
CTEIC6	Ability to understand, implement and manage the security and safety of computer systems.
CTEC6	Ability to develop and assess interactive systems and to present complex information, as well as its application to problem-solving related to computer-user interaction design.

OBJECTIVES

The development of applications in web environments poses a series of distinctive challenges that must be known and addressed specifically. The aim of this course is for students to understand the concepts associated with this type of projects, as well as to be introduced to the use and application of the technologies and languages specific to the sector, understanding the options available and knowing how to assess their applicability. It is also intended that students acquire the most important knowledge and skills necessary to start developing professional web applications, including aspects of design and good practices in their development. To this end and given the changing technological environment in which this subject is situated, a broad approach is considered, as opposed to an in-depth approach. Thus, the student will be provided with the necessary tools to understand and know how to value current technologies, know the most relevant aspects related to the design and development of these applications and discuss current trends in the field.

CONTENT

1. Theory contents

Part I. Introduction to web programming
1. History of web programming
2. Introduction to the web

Part II. Infrastructure and typology
3. Fundamentals of the Internet
4. Web typology and C/S environments

Part III. Fundamentals of web development
5. Technological foundations and corporate sites
6. Client-side languages for the web
7. Best practices in code development

2. Practical contents

In the lab sessions of the course, the student will have the opportunity to plan and develop a web application project. To this end, they will use Java and associated technologies such as JDBC for interaction with databases, and J2EE, one of the most widespread for server-side development of professional applications on a business scale, as well as other front-end languages.

One or more practical cases will be proposed and worked on during the course. The lab exercises may be carried out individually or in teams, as indicated by the teaching staff at the beginning of the course. In a team, students will propose a solution and design their proposal for each problem posed, which they will subsequently have to code and deploy. The teams will be made up of a specific number of students (determined by the work placement

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teaching staff at the beginning of the course) and, once these teams have been constituted, they will remain unaltered for the rest of the academic year. Several incremental deliveries will be planned for the lab exercises, which will include a written technical report, the associated source code, and executables. In addition, the final project may be defended in an oral interview, as established by the teaching staff at the beginning of the course, so attendance to practical sessions will be important.

In general, the lab sessions will be planned to cover the development of a simple web application, covering essential aspects of design (separation into layers, architectural patterns, etc.), development (according to quality criteria and good practices) and deployment.

SUSTAINABLE DEVELOPMENT GOALS RELATED TO THE CONTENT

Unrelated

METHODOLOGY

General clarifications on the methodology (optional)

In addition to the bibliography and lecture summaries, students will have access to additional material on the Moodle virtual learning platform and other sources available and indicated by the teaching staff. Updated references to external resources will also be provided both for the study and consolidation of the content of the subject and its voluntary extension.

Methodological adaptations for part-time students and students with disabilities and special educational needs

In the case of students with specific educational needs, only in exceptional cases, duly justified and duly assessed and informed, may the assessment criteria be modified and adapted to these students, provided that the principles of equal rights and opportunities for all students in the subject are maintained and guaranteed.

Face-to-face activities

Activity	Large group	Medium group	Total
Assessment activities	4	-	4
Case study	8	-	8
Lab practice	-	24	24
Lectures	20	-	20
Seminar	2	-	2
Tutorials	2	-	2
Total hours:	***36***	***24***	***60***

Off-site activities

Activity	Total
Exercises	20

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Activity	Total
Information search	8
Reference search	14
Self-study	48
Total hours	**90**

WORK MATERIALS FOR STUDENTS

Exercises and activities
Oral presentations
Placement booklet
References

Clarifications

All material, including references or links to it, will be available to students through the Moodle platform.

EVALUATION

Intended learning	Exams	Oral Presentation	Placement reports
CB4	X	X	
CTEC6			X
CTEIC6		X	X
CTEIS1	X		X
Total (100%)	**60%**	**10%**	**30%**
Minimum grade	**5**	**5**	**5**

(*)Minimum mark (out of 10) needed for the assessment tool to be weighted in the course final mark. In any case, final mark must be 5,0 or higher to pass the course.

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Attendance will be assessed?:

N o

General clarifications on instruments for evaluation:

LAB PROJECT

The aim is for the student to consolidate and develop the cognitive, procedural, and attitudinal competencies set out in this syllabus. The practical content of the course will be evaluated considering the set of grades from the reports and source codes of the different proposed exercises, together with an oral examination that the lecturer may carry out in order to determine the real knowledge acquired. The qualification may be complemented with self/hetero-assessment reports that will be submitted at the end of the semester. The lecturer will indicate at the beginning of the course the specific weighting of the proposed lab exercises. In any case, the submission of solutions will be consecutive and cumulative in accordance with the specific regulations and the deadlines announced for this purpose. Any assignments submitted late or other means other than the Moodle platform will not be evaluated and considered as failed. The submission in due time and form is required in order to be graded as a Pass (score equal to or greater than 5). In case of passing this practical part (score equal to or greater than 5) but not the total of the subject, this grade will be maintained for the following exam sessions of the academic year. Note that in the " Reports " evaluation component, the individual score of a particular student within a team could be reduced if the teacher finds a lack of active participation, development and commitment to the team's work.

THEORETICAL CONTENT

The theoretical content of the subject will be assessed by means of exams, which may consist of questions (essay or multiple-choice) related to the material taught in the lectures, as well as problems or practical cases related to theory and practice. A short questionnaire (short questions, multiple choice, etc.) will be given at the end of each lesson on the theory content. These assessment tests will count as 30% of the evaluation of the instrument "Exams" (theory evaluation). The final exam in the regulated call will count as 70% of the theory evaluation. The minimum total score required to pass the theoretical content of the course is 5, which represents 60% of the total grade of the subject. In the case of passing this theoretical part but not the complete subject (i.e. lab project failed), this grade will be kept for the following exams of the same academic year.

GENERAL ASPECTS

- Any student who submits an assignment of those proposed in the course will be considered as "Presented" in the subject.

- All students who submit the lab project will be graded overall in the subject. In case of not passing the lab assignments (a grade lower than 5), the student will be considered as "Failed" in the subject. The weighting between practical and theory should not be less than 5 to pass the course.

- Any optional individual activity that may be recommended during the subject will be added to the grade before calculating averages in the part of the content in which the activity was proposed.

- In every assessment component and in the student's final grade, it may consider aspects such as the level of attendance and participation, professionalism and commitment, and level of interest in the topics and presentations made during the course.

- The April extraordinary call is for students who meet the requirements of the extraordinary call for completion of studies (article 29.2 of the RRA). They will be examined according to the guidelines and criteria of the previous year.

- All the ordinary exams of the academic year will be assessed according to the same criteria as above. In the case of the September call, the lab project must be handed in jointly by all those students who, not having passed the lab assignments beforehand, made up the original (indivisible) project team and who intend to take the theory exam.

Based on the above, the following evaluation instruments are used: hetero-evaluation (theory and lab), checklists (lab)

and self-evaluation (lab).

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Clarifications on the methodology for part-time students and students with disabilities and special educational needs:

The assessment mechanism for part-time students will not be altered, although the criteria for attendance and availability of tutoring and monitoring will be made more flexible. In the case of students with special educational needs, subject to an assessment report, adaptation will be considered in very exceptional and duly justified cases. In any case, the principle of equality of all students in the subject will be ensured and guaranteed.

Clarifications on the evaluation of the extraordinary call and extra-ordinary call for completion studies:

They shall be carried out in accordance with the criteria applicable in the last teaching period in which the subject was taught.

Qualifying criteria for obtaining honors:

M.H. will be awarded to the student/s who, having achieved a grade of EXCELLENT in the average of all grades, have demonstrated sufficient skills, as well as their participation and the completion of optional activities.

BIBLIOGRAPHY

1. Basic Bibliography

Oracle: Javadoc Java 8 SE, https://docs.oracle.com/javase/8/docs/api/

Oracle: Java Server Pages technology, https://www.oracle.com/technetwork/java/jsp-138432.html

W3C: HTML 5 / CSS 3 – Current status of the specifications and groups, https://www.w3.org/standards/webdesign/htmlcss

JavaScript Tutorial, https://www.w3schools.com/js/

M. Frisbie. Professional JavaScript for Web Developers. Wiley. 2019. ISBN: 978-1119366447

2. Further reading

J. Boyarsky, S. Selikoff. OCA / OCP Java SE 8 Programmer Certification Kit: Exam 1Z0-808 and Exam 1Z0-809. Sybex. 2016. ISBN: 978-1118957400B.

Scholtz, A. Tijms. The definitive guide to JSF in Java EE 8. Apress. 2018. ISBN: 978-1484233863S.

M. Lauriat. Advanced Ajax. Architecture and Best Practices. Prentice Hall. 2007. ISBN: 0-13-135064-1

J.J. Sydil. Design Accessible Web Sites. The Pragmatic Programmer. 2007. ISBN: 1-934356-02-6

R.C. Martin. Clean Code - A Handbook of Agile Software Craftman. Prentice Hall, 2008. ISBN: 978-0136083238

E. Gamma, R. Helm, R. Johnson, J. Vlissides. Design Patterns: Elements of Reusable Object-Oriented Software, 10th edition. Addison-Wesley Professional, ISBN: 978-0201633610

COORDINATION CRITERIA

Joint activities: lectures, seminars, visits ...

The methodological strategies and the evaluation system contemplated in this Course Description will be adapted according to the needs presented by students with disabilities and special educational needs in the cases that are required.