



UNIVERSIDAD DE CÓRDOBA

ESCUELA POLITÉCNICA SUPERIOR DE CÓRDOBA

GRADO DE INGENIERÍA**INFORMÁTICA**

2024/25 YEAR

PROGRAMACIÓN WEB

Course details

Course name: 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:** <https://moodle.uco.es/>

Coordinating teacher

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Brief description of the contents

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.

Prerequisites

Prerequisites established in the study plan

It is recommended to have passed the subjects Introduction to Programming, Programming Methodology and Object Oriented Programming.

Recommendations

Knowledge of database design and programming is recommended.

Study programme

1. Theory contents

Block I. Introduction to web programming

- Introduction to the web
- Fundamentals of the Internet

Block II. Foundation of web development

- Web frameworks
- Languages for Web programming

Block III. Web client programming languages

- HTML
- Javascript
- CSS

2. Practical contents

In the practical 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 lab exercises will be proposed and worked on during the course. The lab exercises must be performed in teams, as indicated by the teaching staff at the beginning of the course. 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 teaching staff at the beginning of the course) and, once these teams have been formed, they will remain unchanged for the rest of the course. Several incremental deliveries of internships will be planned, which will include a written report, the associated source code, executables and videos presenting the work carried out by the internship team. 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 practicals 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.

Bibliography

Foundational references

- 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

Complementary references

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

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 for voluntary extension of the programme.

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
<i>Assessment activities</i>	3	1	4
<i>Information processing activities</i>	8	-	8
<i>Practical experimentation activities</i>	-	23	23
<i>Projects based on the course contents</i>	23	-	23
<i>Tutorial action activities</i>	2	-	2
Total hours:	36	24	60

Off-site activities

Activity	Total
<i>Exercise and problem solving activities</i>	28
<i>Information processing activities</i>	54

Activity	Total
<i>Information search activities</i>	8
Total hours	90

Results of the training and learning process

Knowledge, competencies and skills

- 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.

Assessment methods and instruments

Intended learning outcomes	Examination	Means of practical execution	Oral means
<i>CB4</i>	X		X
<i>CTEC6</i>		X	
<i>CTEIC6</i>		X	X
<i>CTEIS1</i>	X	X	
Total (100%)	60%	30%	10%
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.

General clarifications on instruments for evaluation:**PRACTICAL CONTENT**

The aim is for the student to consolidate and develop the cognitive, procedural, and attitudinal competencies set out in this guide. 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, and will be published for the total number of internships at the end of the term. The lecturer will indicate at the beginning of the course the specific weighting of the proposed practicals. In any case, the submission of practicals will be consecutive and cumulative, so it will not be possible to submit a practical without having submitted the previous ones, always in accordance with the specific regulations and the deadlines announced for this purpose. The submission of all practicals in due time and form is required in order to be graded as a Pass (grade equal to or higher than 5). In case of passing this practical part (grade higher than 5) but not the total of the subject, this grade will be maintained for the following exam sessions of the academic year. The grade represents 40% of the total score of the course.

THEORETICAL CONTENT

The theoretical content of the subject will be assessed by means of written exam/s, which may consist of questions (essay, short questions, and multiple-choice) related to the material taught in the lectures, as well as problems or practical cases related to theory and practice. Optionally, one or more mid-terms exam may be taken. The minimum grade required to pass the theoretical content of the course is 5, which represents 60% of the total grade of the course. In the case of passing this theoretical part but not the total of the subject, this grade will be maintained for the following exams of the academic year.

GENERAL ASPECTS

- Any student who submits at least one lab exercise will be considered as "Presented" in the subject.
- All students who submit the practicals will be graded overall in the subject. In case of not passing the practicals (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 course of the subject will be added to the grade before calculating averages in the part of the content in which the activity was proposed.
- The student's final grade may take into account aspects such as the level of attendance and participation, professionalism and commitment, 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 practicals must be handed in jointly by all those students who, not having passed the practicals beforehand, made up the original (indivisible) project team and who intend to take the theory exam.

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:

The calls for the first extraordinary call and extraordinary call for the completion of studies will be carried out in accordance with the criteria applicable in the previous academic year.

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.

Sustainable development goals

Unrelated

Other Faculty

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The methodological strategies and the evaluation system contemplated in this Teaching Guide will respond to the principles of equality and non-discrimination and must be adapted according to the needs presented by students with disabilities and special educational needs in the cases that are required. Students must be informed of the risks and measures that affect them, especially those that may have serious or very serious consequences (article 6 of the Safety, Health and Welfare Policy; BOUCO 23-02-23).
