

Information Systems

Code: 102752
ECTS Credits: 6

2025/2026

Degree	Type	Year
Computer Engineering	OB	3
Computer Engineering	OT	4

Contact

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Teachers

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Teaching groups languages

You can view this information at the [end](#) of this document.

Prerequisites

There are no prerequisites. It is recommended for students to have taken the course " Computer Fundamentals".

Objectives and Contextualisation

Information Systems is a course of 6 credits in the bachelor's degree in Computer Engineering.

It is a compulsory course to the "Information Technology" specialization and optional for others mentions. This course

More specifically, the objectives are:

- Understand basic concepts of Information Systems.
- Understand Information Systems and their role in today's organization

- Know Porter's value chain model.
- Understand Integrated Information Systems.
- Develop the capacity to analyze, evaluate and select Integrated Information Systems.
- Understand the implementation life cycle of information system.
- Know new trends in information systems.

Competences

- Computer Engineering
 - Acquire thinking habits.
 - Capacity to determine the requirements of information and communication systems in an organisation attending to security aspects and fulfilment of applicable standards and legislation.
 - Have the capacity to define, evaluate and select hardware and software platforms for the development and execution of computer systems, services and applications.
 - Have the capacity to integrate ICT solutions and business processes to satisfy an organisation's information needs, so they can achieve their aims effectively and efficiently, thus giving them competitive advantages.
 - Have the capacity to select, deploy, integrate and manage information systems that satisfy the needs of an organisation, identifying the cost and quality criteria.
 - Work in teams.

Learning Outcomes

1. Define security and quality specifications for databases and distributed systems.
2. Design and evaluate an integrated information system based on its cost and quality.
3. Determine the requirements of an organisation's information and communication systems.
4. Develop a capacity for analysis, synthesis and prospection.
5. Know and understand the characteristics and possibilities of servers and applications and of the client/server model.
6. Select information system platforms to implement IT solutions.
7. Understand the management, exploitation and maintenance principles of an organisation's information systems.
8. Work cooperatively.

Content

The subject deals with the general concepts of information systems, their role within an organization, the process

Topic 1.- Introduction to information systems

Basic concepts of information systems. Information systems in an organization

Topic 2.- Transaction processing system

Characteristics of transaction processing system. Porter's value chain model

Topic 3. - Decision support system

Characteristics of the decision support system. Types of decision support systems

Topic 4. - Business intelligence systems

Definition of the business intelligence system. Components of the Business Intelligence system

Topic 5.- Strategic management of information systems

Department of information systems. Professional role. Tools to support the strategic management of information systems

Activities and Methodology

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Practical classes	12	0.48	7, 5, 1, 4, 3, 2, 6, 8
Problems classes	12	0.48	7, 5, 1, 4, 3, 2, 6, 8
Theoretical classes	26	1.04	7, 5, 1, 4, 3
Type: Supervised			
Mentoring	18	0.72	7, 5, 4, 3, 2
Type: Autonomous			
Individual work	25	1	5, 1, 4, 3
Preparing for an exam	20	0.8	5, 1, 4, 3
Preparing for problems and practices	30	1.2	7, 4, 3, 2, 6

The subject consists of a theoretical part, a practical part, and a part of personal work of the student. The subject

that are distributed according to the following table. Student hours are shown.

TE	Theory	26h
Theoretical classes		
PAUL	Problems	12h
Problem solving and discussion by students on issues and cases		
PLAB	Practices	12h
Resolution of group cases, preparation, presentation and discussion of the practices		

We focus on the different activities, depending on its typology:

Directed activities (33%)

In the theory sessions, the teaching staff will provide information on the basic concepts and techniques of the subject.

During these sessions, the active participation of the students will be encouraged by proposing examples or alternative solutions.

as well as gathering evidence in relation to the practical cases exposed during the session to monitor the student's progress.

In the classes of problems, a list of exercises will be followed that the student will solve.

Resolution of problems and cases in class that work the concepts explained by the teacher. The student's participation will be encouraged.

and presenting new approaches to the problem.

Attendance at problems classes is compulsory.

In the sessions of practices of Laboratory will be dealt with in depth related to the subject.

The student will put into practice the knowledge that is acquiring the subject, as well as the transversal competences.

Attendance at practical classes is compulsory.

Autonomous activities (50%)

Individual study of the student, preparation of diagrams, conceptual maps, summaries, etc.
 Research and consultation of the bibliography of the subject.
 Individual resolution or in reduced groups of problems and cases, outside the classroom.

Supervised activities (12%)

Preparation by the student of actions and works, under the tutelage of the professor.
 Group and individual tutorials.

Evaluation activities (5%)

Individual and group tests that determine the acquisition by the student of the expected learning outcomes. In carrying out these tests, the student will be evaluated on the following aspects:

In addition to the specific competences of the subject, the transversal competences acquired by the students will also be evaluated, the development of which will be assessed through the following activities:

Transversal competences

- T01.02 Develop the capacity for analysis, synthesis and prospecting: This competence will be worked on in the sessions of problems, laboratory practices and in the mentioned autonomous activities. Specifically, in the sessions of problems in the resolution of the problems and cases proposed, in the practices of Laboratory with the approach that it makes of the real cases and the extension of subjects, and in the autonomous activities with the preparation of schemes, maps conceptuals, abstracts, etc., and resolution of cases outside the classroom environment. This competence is assessed within the framework of these tasks, quantitatively representing 10% of each task.
- T03.01 Work cooperatively: This competence will be worked on in the sessions of laboratory practices and in the mentioned autonomous activities. Specifically, in the laboratory practices with the cooperative work that is carried out in each one of the practices that are posed (of a group nature), and in the autonomous activities with the resolution in small groups of problems and cases, outside the about the classroom. The practices carried out are validated with questions to the members of each group once the activity has been delivered, and it allows to evaluate the cooperative work that has been carried out, among others, in aspects such as: interaction, planning and organization, Information management, attitudes, ... This evaluation of cooperative work corresponds to 10% of the qualification of each task.

Annotation: Within the schedule set by the centre or degree programme, 15 minutes of one class will be reserved for students to evaluate their lecturers and their courses or modules through questionnaires.

Assessment

Continuous Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Final work	10%	1	0.04	4, 8
Partial tests / Recovery tests	40%	2	0.08	7, 5, 1, 4, 3

Practices	20%	2	0.08	7, 5, 1, 4, 3, 2, 6, 8
Problems	30%	2	0.08	7, 5, 1, 4, 3, 2, 6

Continuous-assessment dates, delivery of problems, practices or work will be published on Campus Virtual (<https://cv.uab.cat>) and on the presentation slides, specific programming may change when necessary. Any such modification will always be communicated to students through Campus Virtual, which is the usual communication platform between lecturers and students.

a) Process and evaluation activities programmed

The assessment will be continuous and formative based on the development of the following evaluation activities:

- Problems (PP): resolution and delivery of problems and exercises proposed specifically for each session of problems, as well as the active participation in the sessions of problems.
- Practices (PL): completion of the practice reports and participation in the practical sessions. The correction of the delivered practices and their presentation will be evaluated. Although the practices will be in group, the qualifications will be individual, with questions to validate the practices delivered. In addition, the acquisition of the cross-cutting competence of working cooperatively with aspects such as the coordination and the distribution of tasks among the members of the group will be evaluated.
- Final work (TF): The teaching staff will propose a series of subjects related to the subject. A student from each group will have to communicate the selected topic and the teacher will have to validate the selection. The memory of the work and the oral presentation will be evaluated. Although the work will end in a group, the qualifications will be individual.
- Partial validation tests (PPV): of individual knowledge. This part will be composed of two tests, a first partial test performed in the middle of the course and a second partial test in the month of January. The specific dates will be communicated at the beginning of the course. Both tests are free of charge in case they are overcome with a grade greater than or equal to 4.

The PPV will contain questions of the theory classes and a problem or exercise related to the part of problems that will be taken into account for the qualification of the part of problems.

Each evaluation activity will have a final grade that will be obtained if the following requirements are met:

- Final qualification of Partial Tests (NProv): In the event that the qualification from each of the two partials reaches 4 or more, the NProv will be the simple average of the two grades. Otherwise, the calculation will not be made and the student will have to submit to the recovery exam only for the part or parts suspended.
- Final problem qualification (NProb): The final grade will be obtained from the average of all the notes of problems and the qualifications of the problem question in each of the partial validation tests. Those students with a NProb of less than 4 will be able to take a review of this part.
- Final qualification of practices (NPract): The final grade will be obtained from the average of all practice notes. In the first class of practices, the weight of each practice will be reported in the NPract. Those students who have NPract less than 4 can not perform a recovery practice, the part of the practice is not recoverable.
- Final work qualification (NT): The final work will have two grades, the group work memorandum and the individual mark of each student based on the oral presentation and the questions posed during the exhibition. Those students who have the final suspended work will be able to do the work of a new subject proposed by the teaching staff.

Test	Participation	Minimum rating	Weighting
	Individual	4	40%
Partial tests / Recovery tests			
Problems	Individual	4	30%
Practices	Group	4	20%
Final work	Group	5	10%

b) Programming of evaluation activities

The scheduling of the assessment activities will be given on the first day of the subject and will be made public through the Virtual Campus and on the website of the School of Engineering, in the exam section.

c) Recovery process

Each part of the partial tests, problems and practices will have to be exceeded with a score of 4 or more and the final work with a score of 5 to be able to calculate the final mark of the subject. Otherwise, the student will have to perform the corresponding recovery tests:

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Proof of recovery of partial exams:

of individual knowledge. Only students that have not obtained the minimum mark in one of the partial exam

- Problem recovery test: of individual knowledge. The students who do not obtain the minimum mark in the final note of problems will be presented to the examination of recovery of this part.
- Test of recovery of the final work: of individual knowledge. The students who do not obtain the minimum mark of the final work will do an individual work of the subject proposed by the teaching staff, as a recovery of this part.

The practical part of the subject is not recoverable. Students who do not obtain the minimum mark in this part will be suspended the subject.

The recovery test will also apply the minimum required for each of the parts to which the student must present. Also, within this test, each part must be exceeded with a mark greater than or equal to 4 to be able to ponder the final grade of the subject.

To pass the subject it is necessary that the evaluation of each one of the parts exceeds the minimum required and that the total evaluation exceeds the 5 points. If you do not pass the subject for some of the two previous conditions, the numerical note of the file will be the lowest value between 4,5 and the weighted average of the notes.

Therefore, after completing the recovery test, if the calculation of the final mark of the subject is equal to or greater than 5, but the minimum required in one of the assessment activities has not been obtained, the numerical note of The file will be the lowest value between 4,5 and the weighted average of the notes.

d) Procedure for the review of qualifications

For each assessment activity, a place, date and time of review will be indicated allowing students to review the activity with the lecturer. In this context, students may discuss the activity grade awarded by the lecturers responsible for the subject.

If students do not take part in this review, no further opportunity will be made available.

e) Special qualifications

Students who have to submit to the recovery test (to suspend one of the two partial tests or both), do not submit to the recovery, they will have a "Non-Valuable" rating on their file.

In order to pass the course with honours, the final grade must be a 9.0 or higher. Because the number of students with this distinction cannot exceed 5% of the number of students enrolled in the course, this distinction will be awarded to whoever has the highest final grade.

Regarding the repeating students, in the case of having passed the practices, the final work or the problems, will save the Qualification obtained from the previous course in these parts. The repeating students will not have differential treatment in the parts that they must take.

f) Irregularities by the student, copy and plagiarism

Without prejudice to other disciplinary measures deemed appropriate, and in accordance with current academic r

Evaluation activities qualified in this way and by this procedure will not be recoverable. If it is necessary to pass :

These irregularities include, among others:

- the total or partial copy of a practice, report, or any other evaluation acti
 - let copy;
 - present a group work not done entirely by the members of the group (a)
 - unauthorized use of AI (eg Copilot, ChatGPT or equivalent) to solve ex
 - Submit as your own materials prepared by a third party, even if they are
 - have communication devices (such as mobile phones, smartwatches, c
 - talk with classmates during the individual theoretical-practical evaluation
 - copy or try to copy other students during the theoretical and practical ev
 - Use or attempt to use writings related to the subject during the theoretic
- In future editions of this subject, students who have committed irregularit
- In summary: copying, allowing copying or plagiarism (or the attempt to) ir

g) Evaluation of repeating students

Regarding the repeating students, in the case of having passed the practices, the final work or the problems, will save the qualification obtained from the previous course in these parts. The repeating students will not have differential treatment in the parts that they must take.

h) Single assessment

This course does not provide for the single assessment system.

i) Restricted Use of AI

For this course, the use of Artificial Intelligence (AI) technologies is permitted exclusively for support tasks, such as searching for bibliography or information, or gathering ideas about tools and systems. Students must clearly identify in each submitted assignment which parts have been generated using AI technology, specify the tools used (including the prompts), and include a critical reflection on how these tools have influenced both the process and the final outcome of the activity.

Failure to transparently disclose the use of AI in this graded activity will be considered a breach of academic integrity and may result in partial or total penalties on the assignment grade, or more severe sanctions in serious cases.

Bibliography

Essential reading:

- K.C. Laudon, J.P. Laudon (2019, 16ª). Management Information Systems: Managing the digital firm. Pearson Prentice Hall.
- A. Gómez Vieites, C. Suárez Rey (2011, 4ª). Sistemas de información: herramientas prácticas para la gestión empresarial. RA-MA.
- Davenport, T. H. (1998). Putting the enterprise into the enterprise system. Harvard business review, 76(4)
- V. Fernandez Alarcon (2006). Desarrollo de sistemas de información. Una metodología basada en el modelado. Edicions UPC

(https://csuc-uab.primo.exlibrisgroup.com/permalink/34CSUC_UAB/1gfv7p7/alma99100867509970670)

Further reading:

- Leon, A. (2014). Enterprise resource planning. McGraw-Hill Education.
- O'Leary, D. E. (2000). Enterprise resource planning systems: systems, life cycle, electronic commerce, and risk. Cambridge university press.
- Valcárcel, I. G. (2001). CRM: gestión de la relación con los clientes. FC Editorial.
- Goddard, M. G. J., Raab, G., Ajami, R. A., & Gargeya, V. B. (2012). Customer relationship management: a global perspective. Gower Publishing, Ltd.
- Kumar, V., & Reinartz, W. (2018). Customer relationship management: Concept, strategy, and tools. Springer.
- Stadtler, H. (2005). Supply chain management and advanced planning--basics, overview and challenges. European journal of operational research, 163(3), 575-588.
- Christopher, M. (2016). Logistics & supply chain management. Pearson UK.
- Davenport, T. H. (2000). Mission critical: realizing the promise of enterprise systems. Harvard Business Press.
- Davenport, T. H. (2006). Competing on analytics. Harvard business review, 84(1), 98.
- Turban, E., Sharda, R., & Delen, D. (2010). Decision Support and Business Intelligence Systems (required). Prentice Hall Learning.

Software:

The software used in the course is open-source software (information systems: ERPs, CRMs, BI).

Software

Software used in the course is open source (information systems-ERPs, BI systems, ...)

Groups and Languages

Please note that this information is provisional until 30 November 2025. You can check it through this [link](#). To consult the language you will need to enter the CODE of the subject.

Name	Group	Language	Semester	Turn
(PAUL) Classroom practices	451	Catalan	first semester	morning-mixed
(PAUL) Classroom practices	452	Catalan	first semester	morning-mixed
(PAUL) Classroom practices	453	Catalan	first semester	morning-mixed
(PLAB) Practical laboratories	451	Catalan	first semester	morning-mixed
(PLAB) Practical laboratories	452	Catalan	first semester	morning-mixed
(PLAB) Practical laboratories	453	Catalan	first semester	morning-mixed
(PLAB) Practical laboratories	454	Catalan	first semester	morning-mixed
(PLAB) Practical laboratories	455	Catalan	first semester	morning-mixed
(PLAB) Practical laboratories	456	Catalan	first semester	morning-mixed
(TE) Theory	450	Catalan	first semester	morning-mixed