

Degree programme	Type	Course
Aeronautical Management	OB	3

Contact lecturer

Name : Isabel Guitart Hormigo

Email : mariaisabel.guitart@uab.cat

Teaching staff

Ramón Musach Pi

Group languages

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

Prerequisites

There are no prerequisites. However, it is recommended that students had previously taken Basic Programming I and Databases courses.

Objectives

This course gives the guidelines to know what is an information system, how the organizations obtain continuous improvements with information systems to achieve a high level of competitiveness.

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

Learning outcomes

- CM13 (Evaluate an ICT management and administration system based on evidence-based criteria such as strategic alignment, value generation, cost efficiency, among others.) Evaluate an ICT management and administration system based on evidence-based criteria such as strategic alignment, value generation, cost efficiency, among others.
- KM23 (Cite the main challenges in the design, implementation and management of information systems

in organisations in the aeronautical sector, considering their integration with other technologies and their impact on decision-making and competitiveness.) Cite the main challenges in the design, implementation and management of information systems in organisations in the aeronautical sector, considering their integration with other technologies and their impact on decision-making and competitiveness.

- KM24 (Identify the main computer security risks in the information systems used in the aeronautical sector, analysing strategies for data protection, cybersecurity and threat mitigation in critical environments.) Identify the main computer security risks in the information systems used in the aeronautical sector, analysing strategies for data protection, cybersecurity and threat mitigation in critical environments.
- SM19 (Design information systems for aeronautical management, guaranteeing aspects of safety, privacy and integrity to optimise decision-making and efficiency in the sector.) Design information systems for aeronautical management, guaranteeing aspects of safety, privacy and integrity to optimise decision-making and efficiency in the sector.

Contents

Topic 1.- Introduction to information systems

Basic concepts of information systems. Types of information systems in an organization. Evolution of information systems in an organization.

Topic 2.- Transactional Processing Systems

Characteristics of the Transactional Processing System. Porter's chain value. Types of information systems: Internal Resource Management (ERP), Customer Relations Management (CRM), Supply Chain Management (SCM). Proprietary and open source solutions (Open Source). Management of implementation projects.

Topic 3. - Decision Support Systems

Characteristics of the Decision Support Systems. Concept of Business Intelligence. Components of the Business System. Data warehouse. Data Mart. ETL tools. Data Mining. Dashboards. Reporting.

Topic 4.- Strategic management of information systems

Department of information systems in an organization. Professional role. Tools support management of ICT.

Topic 5.- Analysis and Design of information systems

Concept of software engineering. Methodologies for the development of information systems. Difference analysis and design of information systems. Tools for analysis of information systems. Information systems design tools. Examples and practical cases.

Learning activities and methodology

Title	Hours	ECTS	Learning outcomes
Individual work	25	1	CM13, KM23, KM24, SM19
Preparing for an exam	25	1	CM13, KM23, KM24, SM19
Mentoring	18	0.72	KM23, KM24
Preparing for problems and practices	25	1	CM13, KM23, KM24, SM19
Theoretical classes	26	1.04	CM13, KM23, KM24

Problems classes	12	0.48	CM13, KM23, KM24
Seminar classes	4	0.16	KM23, KM24
Practical classes	8	0.32	CM13, KM23, KM24, SM19

Teaching will be offered on campus or in an on-campus and remote hybrid format depending on the number of students per group and the size of the rooms at 50% capacity. The subject consists of a theoretical part, practical part, and part of personal work of the student. The subject consists of 6 ECTS credits. It is taught in a total of 50 classroom-based hours per student that are distributed according to the table below. Classroom hours are indicated per student.

The total dedication of the student is 150 hours total, having a non-attendance of 100 hours.

Supervised Practices and Activities (seminars) will be carried out online and synchronously way (in the interaction space to be communicated). Therefore, there will be no face-to-face in the hours of supervised Practices and Activities. If any of the sessions are changed to synchronous way, it will be communicated within the Virtual Campus.

TE Theory	26 h	Theoretical classes
PE Problems	12 h	Problem solving and discussion by students on issues and cases
PL Practices	8 h	Resolution of group cases, preparation, presentation and discussion of the practices
AS Supervised activities	4 h	Presentation and discussion of final works.

Theory

In the theory sessions, the teaching staff will provide information on the basic concepts and techniques of the subject, with indications of how to expand and organize their learning.

During these sessions, the active participation of the students will be encouraged by proposing examples or alternatives to the solutions presented, as well as gathering evidence in relation to the practical cases exposed during the session to monitor the student's learning. Among the transversal competences will be those related to personal work habits and thinking habits.

Problems

Problem sessions will be raised and discussed specific questions related to the theoretical part. The session will be resolved, put into common, and discussion of questions or exercises.

In this session, a very active participation of the students is expected. Generally, each session will be initiated by a student presenting their vision on the issues, which will be discussed later by the rest of the students with

the help of the teacher. This presentation on the part of the student will constitute the evidence of main evaluation on the part of problems.

In the sessions of problems, in addition to the specific competences of the subject, the transversal competences related to personal work habits and thinking habits will be worked on.

Practices

The practical sessions will be devoted to the resolution of cases in group: during the session, cases and practical problems that students will have to consider and solve in a group will be considered. At the beginning of the course, the calendar of the sessions will be made public. The student will put into practice the knowledge that he is acquiring in the subject, and the transversal competences related to the team work.

Supervised activities

During the course the students will do a work in groups of 3 or 4 students. The work will be on extensions of the syllabus, each group will choose a topic of those proposed by the teaching team.

The work will be the preparation of a small memory following a script agreed and approved by the teaching team.

At the end of the course, each group will present a presentation of their work where there will be a debate with all the students.

At the beginning of the course, the calendar of the sessions will be made public. The student will put into practice the knowledge that is being acquired in the subject, and the transversal competences related to communication and teamwork.

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.

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	Weight	Hours	ECTS	Learning outcomes
Problems	30	2	0.08	CM13, KM23, KM24
Practices	20	2	0.08	CM13, KM23, KM24, SM19
Partial tests / Recovery tests	40	2	0.08	CM13, KM23, KM24, SM19
Final work	10	1	0.04	CM13, KM23, KM24, SM19

The proposed evaluation activities may undergo some changes according to the restrictions imposed by the health authorities on on-campus courses.

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: 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: 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.
- Seminar: group elaboration of a final work. 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: 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 firstclass 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
Partial tests/ Recovery tests	Individual	4	40%
Problems	Individual	4	30%
Practices	Group	4	20%
Seminar (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:

- Proof of recovery of partial exams: of individual knowledge. Only students that have not obtained the minimum mark in one of the partial exams or in the two partial examinations will be presented to this test. The partial will be recovered that does not reach the minimum mark; If both are partial will be presented to the examination of recovery of both partial.
- 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 or problems), 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.

f) Irregularities by the student, copy and plagiarism

Without prejudice to other disciplinary measures deemed appropriate, and in accordance with current academic regulations, irregularities committed by a student that may lead to a grade variation in an evaluable activity will be graded zero (0). Evaluation activities qualified in this way and by this procedure will not be recoverable. If it is necessary to pass any of these evaluation activities to pass the subject, this subject will be suspended directly, with no opportunity to recover it in the same course.

These irregularities include, among others:

- the total or partial copy of a practice, report, or any other evaluation activity;
- let copy;
- present a group work not done entirely by the members of the group (applied to all members, not only to those who have not worked);
- unauthorized use of AI (eg Copilot, ChatGPT or equivalent) to solve exercises, practices and/or any other evaluable activity;
- Submit as your own materials prepared by a third party, even if they are translations or adaptations, and in general works with non-original and exclusive elements of the student;
- have communication devices (such as mobile phones, smartwatches, camera pens, etc.) accessible during individual theoretical-practical assessment tests (exams);
- talk with classmates during the individual theoretical-practical evaluation tests (exams);
- copy or try to copy other students during the theoretical and practical evaluation tests (exams);
- Use or attempt to use writings related to the subject during the theoretical-practical evaluation tests (exams), when these have not been explicitly allowed.
-

In future editions of this subject, students who have committed irregularities in an evaluation act will not have any of the evaluation activities carried out validated. In summary: copying, allowing copying or plagiarism (or the attempt to) in any of the evaluation activities is equivalent to a FAIL, not compensable and without validation of these parts of the subject in subsequent courses.

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:

- Laudon, Kenneth C. & Laudon, Jane P. (2018). Management information systems: managing the digital firm. (15th global ed.) Pearson Education Limited

[Available](#) in print at the library

[Available](#) online

- Fernández Alarcón, Vicenç. (2006). Desarrollo de sistemas de información: una metodología basada en el modelado. Edicions UPC

[Available](#) online

[Available](#) in print at the library

- Gómez Vieites, Álvaro & Suárez, Carlos. (2011). Sistemas de información: herramientas prácticas para la gestión empresarial. (4ª ed. ampl. y act.) RA-MA

[Available](#) in print at the library

- Seamster, T. L. (2017). *Aviation information management: from documents to data*. Routledge.

[Available](#) online

- García Valcárcel, Ignacio. (2001). CRM: gestión de la relación con los clientes. Fundación Confemetal

[Available](#) in print at the library

- Kumar, V. & Reinartz, Werner J. (2018). Customer relationship management: concept, strategy, and tools. (3rd ed.) Springer

[Available](#) online

[Available](#) in print at the library

- Christopher, Martin. (2016). Logistics & supply chain management. (5th ed.) Pearson

[Available](#) in print at the library

[Available](#) online

Further reading:

- O'Leary, Daniel Edmund. (2000). Enterprise resource planning systems : systems, life cycles, electronic commerce, and risk. (1st ed.) Cambridge University Press

[Available](#) online

- Raab, Gerhard. (2008). Customer relationship management: a global perspective. (1st ed.) Gower

[Available](#) online

[Available](#) in print at the library

- Davenport, Thomas H. (2000). Mission critical: realizing the promise of enterprise systems. Harvard Business School Press

[Available](#) in print at the library

- Davenport, Thomas H. (2002). Misión crítica: promesas y riesgos de los sistemas empresariales de información. Oxford University Press

[Available](#) in print at the library

- Turban, Efraim & Delen, Dursun & Sharda, Ramesh. (2011). Decision support and business intelligence systems. (9th ed.) Prentice Hall

[Available](#) en paper a la biblioteca

- Eckerson, W. W. (2011). Performance dashboards: measuring, monitoring, and managing your business (2nd ed.). Wiley.

[Available](#) in print at the library

[Available](#) online

- Davenport, Thomas H. (2007). Competing on analytics. Computerworld, 41(38), 52.

[Available](#) online

- Stadtler, H. (2005). Supply chain management and advanced planning--basics, overview and challenges. European journal of operational research, 163(3), 575-588.

[Available](#) online

Software

Software

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

Course groups and languages

The information provided is provisional until November 30. After this date, you will be able to consult the language of each group through this [link](#). To access the information, you will need to enter the course CODE

Type of teaching	Group	Language	Semester	Shift
(TE) Theory	1	Catalan	first semester	afternoon
(PAUL) Classroom practices	11	Catalan	first semester	afternoon
(PLAB) Practical laboratories	11	Catalan	first semester	afternoon
(SEM) Seminars	11	Catalan	first semester	afternoon
(PLAB) Practical laboratories	12	Catalan	first semester	afternoon
(SEM) Seminars	12	Catalan	first semester	afternoon
(PLAB) Practical laboratories	13	Catalan	first semester	afternoon
(SEM) Seminars	13	Catalan	first semester	afternoon