Universitat Autònoma de Barcelona

2019/2020

Analysis and Design of Information Systems

Code: 101766
ECTS Credits: 6

Degree	Type	Year	Semester
2501233 Aeronautical Management	OB	3	1

Contact

Name: Maria Isabel Guitart Hormigo
Email: MariaIsabel.Guitart@uab.cat

Use of Languages

Principal working language: catalan (cat)
Some groups entirely in English: No
Some groups entirely in Catalan: Yes
Some groups entirely in Spanish: No

Teachers

Ramón Musach Pi

Prerequisites

There are no prerequisites. However, it is recommended that students had previously taken "Fundamentals of Computing" and "Advanced Computing" courses.

Objectives and Contextualisation

This course gives the guidelines to know what is an information system, how the organizations obtain continuous

- 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.

Competences

- Apply specific software for solving problems in the aeronautical sector.

- Communication.
- Develop software of low or medium complexity.
- Personal work habits.
- Thinking skills.
- Use knowledge of the fundamental principles of mathematics, economics, information technologies and psychology of organisations and work to understand, develop and evaluate the management processes of the different systems in the aeronautical sector.
- Use new technologies in airline management.
- Work in teams.

Learning Outcomes

1. Accept and respect the role of the various team members and the different levels of dependence within the team.
2. Analyse and design a basic information system for a particular problem in the sector.
3. Communicate knowledge and findings efficiently, both orally and in writing, both in professional situations and with a non-expert audience.
4. Configure the architecture of an information system providing integrated support to an organisation.
5. Create applications to exploit the information stored in databases.
6. Detail the principal elements of the process of analysis and design of an organisation's information system.
7. Develop independent learning strategies.
8. Develop systemic thinking.
9. Develop the ability to analyse, synthesise and plan ahead.
10. Enumerate the characteristics of the principal ways of using information systems in business management.
11. Explain the use, analysis and design of information systems.
12. Make a simulation of the use of information systems in companies in the aeronautical sector.
13. Make efficient use of ICT in communicating ideas and results.
14. Manage time and available resources. Work in an organised manner.
15. Study and analyse the software and hardware resources necessary for the use of information systems in the company.
16. Understand the basic methods of representing information, learning and researching in order to solve problems.
17. Work cooperatively.
18. Work independently.

Content

Topic 1.- Introduction to information systems

Basic concepts of information systems. Types of information systems in a

Topic 2.- Transactional Processing Systems

Characteristics of the Transactional Processing System. Porter's chain va

Topic 3. - Decision Support Systems

Characteristics of the Decision Support Systems. Concept of Business Ir

Topic 4.- Strategic management of information systems

Department of information systems in an organization. Professional role.

Topic 5.- Analysis and Design of information systems

Concept of software engineering. Methodologies for the development of i

Tools for analysis of information systems. Information systems design tools. Examples and practical cases.

Methodology

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 di

The total dedication of the student is 150 hours total, having a non-attend

s.

TE	Theory	26 h.	Theoretical classes
PP	Problems	12 h.	Problem solving and discussion by students on iss
PL	Practices	8 h.	During these sessions, the active participation of the students will be encouraged by proposing examples or alte
AS	Supervised activities	4 h.	Presentation and discussion of final works.

Problems

Resolution of group cases, preparation, presentatic

Problem sessions will be raised and discussed specific questions related

The session will be resolved, put into common, and discussion of questions or exercises. In this session, a very

In the sessions of problems, in addition to the specific competences of th

Practices

The practical sessions will be devoted to the resolution of cases in group

Supervised activities

During the course the students will do a work in groups of 3 or 4 students

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 a

At the beginning of the course, the calendar of the sessions will be made public. The student will put into practice

and the transversal competences related to communication and teamwork.

Transversal competences assigned to the subject

About thinking habits:

T01.02 Develop the capacity for analysis, synthesis and prospecting
T01.04 Develop systemic thinking.
This competence will be worked on in the sessions of problems, laborato

Specifically, in the sessions of problems in the resolution of the problems and cases proposed, in the practices o

About teamwork:

T03.01 Working cooperatively
T03.02 Assume and respect the role of the various members of the tea
This competence will be worked on in the sessions of laboratory practice

Specifically, in the laboratory practices with the cooperative work that is carried out in each one of the practices t

About communication strategies:
T04.01 Communicate efficiently, orally and / or written, knowledge, res
T04.02 Efficient use of ICT in the communication and transmission of i
This competence will be worked on in the sessions of practices, problem

This evaluation of the communication strategy corresponds to 10% of the qualification of each task.

Activities

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Classes de seminaris	4	0.16	1, 3, 8, 7, 9, 13, 14, 17, 18

Practical classes	8	0.32	2, 1, 16, 3, 4, 5, 8, 9, 6, 10, 15, 13, 12, 17
Problem classes	12	0.48	2, 16, 3, 4, 8, 9, 6, 10, 11, 17
Theory classes	26	1.04	2, 16, 3, 4, 5, 8, 9, 6, 10, 15, 11, 12
Type: Supervised			
Tutoring of final work	18	0.72	1, 3, 13, 17
Type: Autonomous			
Final test preparation	25	1	8, 7, 9, 18
Personal work	25	1	8, 7, 9, 14, 18
Problems and practices preparation	25	1	4, 8, 7, 9, 14, 18

Assessment

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 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	25%
Practices	Group	4	25%
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 exar
- 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 besuspended the subject.

The recovery test will also apply the minimum required for each of the parts to which the student must present. A
To pass the subject it is necessary that the evaluation of each one of the

If you do not pass the subject for some of the two previous conditions, the numerical note of the file will be the lo

Therefore, after completing the recovery test, if the calculation of the final mark of the subject is equal to or great

obtained, the numerical note of The file will be the lowest value between 4,5 and the weighted average of the no

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 a

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

In order to pass the course with honours, the final grade must be a 9.0 or higher. Because the number of studen

Regarding the repeating students, in the case of having passed the practices, the final work or the problems,will

f) Irregularities by the student, copy and plagiarism

It will not be accepted under any concept an activity, work or practice in v

and in accordance with the current academic regulations, irregularities committed by a student that may lead to a

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

directly, without opportunity to recover it in the same course. Therefore, plagiarizing, copying or letting copying a

recovered in the same academic year. If this activity has a minimum associated mark then the subject will be sus

g) Evaluation of repeating students

Regarding the repeating students, in the case of having passed the pract

The repeating students will not have differential treatment in the parts that they must take.

Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Final work	10%	1	0.04	2, 1, 3, 8, 9, 15, 13, 12, 14, 17
Practices	25%	2	0.08	2, 1, 16, 3, 4, 5, 9, 6, 10, 15, 11, 13, 12, 14, 17
Problems	25%	2	0.08	2, 16, 10, 15, 11
Validation tests / Recovery tests	40%	2	0.08	2, 16, 3, 8, 7, 9, 6, 10, 15, 11, 14, 18

Bibliography

Basic bibliography:

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Further reading:

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