

**Information Systems**

Code: 102389  
ECTS Credits: 6

Degree	Type	Year	Semester
2501572 Business Administration and Management	OT	2	0
2501572 Business Administration and Management	OT	4	0
2501573 Economics	OT	2	0
2501573 Economics	OT	4	0

**Contact**

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**Use of languages**

Principal working language: catalan (cat)  
Some groups entirely in English: Yes  
Some groups entirely in Catalan: Yes  
Some groups entirely in Spanish: Yes

**Teachers**

Xavier Verge Mestre  
Joan Caballero Chacon

**Prerequisites**

Course development does not require any knowledge prerequisites.  
All administrative requirements to enrol the course must be fulfilled.

**Objectives and Contextualisation**

Show the way that companies are using systems and information technologies to transform business models, develop new strategies, innovate with new products and services and achieve operational excellence.

1. Understand why information systems are so essential in business today.
2. Differentiate applications or functionalities according to the basic types of Information Systems and identify the added value they bring to management.
3. Understand how business processes are executed using Information Systems.
4. Define an information system both from technical and business point of view.
5. To evaluate the complementary assets required for the information systems to add value to the company.
6. Identify the risks derived from digital dependency.
7. Use specific tools in the field of data analysis and business process execution.
8. Understand how the Internet and the mass adoption of Information Systems have impacted traditional business models.

**Skills**

### **Business Administration and Management**

- Apply mathematical instruments to synthesise complex economic-business situations.
- Apply theoretical knowledge to improve relations with clients and suppliers, identifying the advantages and disadvantages of those relations for both sides: company and client or supplier.
- Capacity for adapting to changing environments.
- Capacity for independent learning in the future, gaining more profound knowledge of previous areas or learning new topics.
- Capacity for oral and written communication in Catalan, Spanish and English, which enables synthesis and oral and written presentation of the work carried out.
- Demonstrate initiative and work individually when the situation requires it.
- Identify, justify and reason the appropriate decisions according to the basic parameters of a business problem.
- Organise the work in terms of good time management, organisation and planning.
- Select and generate the information necessary for each problem, analyse it and take decisions based on that information.
- Show motivation for carrying out quality work and sensitivity to the consequences for the environment and society.
- Take decisions in situations of uncertainty, demonstrating an entrepreneurial and innovative attitude.
- Use of the available information technology and adaptation to new technological environments.
- Value ethical commitment in professional practice.
- Work well in a team, being able to argue proposals and validate or reject the arguments of others in a reasoned manner.

### **Learning outcomes**

1. A capacity of oral and written communication in Catalan, Spanish and English, which allows them to summarise and present the work conducted both orally and in writing.
2. Apply algorithmic resolution techniques to optimisation problems.
3. Apply the basic principles of modelling in business decision-making.
4. Assess ethical commitment in professional activity.
5. Capacity to adapt to changing environments.
6. Capacity to continue future learning independently, acquiring further knowledge and exploring new areas of knowledge.
7. Demonstrate initiative and work independently when required.
8. Demonstrate motivation regarding the quality of the work performed and sensitivity regarding the consequences on the environment and society.
9. Differentiate between alternative methods of analysis, and apply the appropriate quantitative tools to resolve business management problems.
10. Make decisions in situations of uncertainty and show an enterprising and innovative spirit.
11. Model the management of business operations by applying quantitative support techniques.
12. Organise work, in terms of good time management and organisation and planning.
13. Select and generate the information needed for each problem, analyse it and make decisions based on this information.
14. Solve problems optimising and obtaining forecasts through information technology applications.
15. Use available information technology and be able to adapt to new technological settings.
16. Use forecasting techniques in business contexts.
17. Work as part of a team and be able to argue own proposals and validate or refuse the arguments of others in a reasonable manner.

### **Content**

Unit 1: Information systems in global businesses Today

1. Data, information and knowledge.
2. The information value chain: database and information management.
3. Information system types.
4. ICT infrastructure. Data centers and cloud computing.

Unit 2: Business processes and management information systems.

1. Business processes.
2. Corporate information systems: ERP, CRM and SCM.

Unit 3: Data analysis: support to control and decision making.

1. Business intelligence.
2. Big data and analytics.

Unit 4: Digital transformation.

1. Digital disruption.
2. Ecommerce.
3. Collaborative economy.
4. Internet of things, smart cities and industry 4.0.

Unit 5: Security and ethical aspects related with information systems.

1. Integrity, availability and confidentiality.
2. Threats and cybercrime.
3. Securing Information Systems
4. Privacy, transparency and intellectual property.

Unit 6: Productivity tools.

1. Data analysis using spreadsheets.
2. Information management: Relational databases.

## Methodology

The knowledge units included in the course will be developed throughout the semester.

Through each chapter, a series of exercises and activities will be proposed to the students to reinforce the contents. These activities will be developed individually or in small groups.

Each week the teachers will be available to attend the students individually to solve any doubts they may have (tutorial time).

## Activities

Title	Hours	ECTS	Learning outcomes
<b>Type: Directed</b>			
Lectures	25	1	3, 2, 1, 6, 9, 11, 14, 16, 15, 4
Perform practical exercises in groups	20	0.8	3, 2, 5, 1, 6, 7, 9, 11, 8, 12, 10, 14, 13, 17, 16, 15, 4
<b>Type: Supervised</b>			
Personalized tutoring in the teacher office	7.5	0.3	3, 2, 5, 1, 6, 7, 9, 11, 8, 12, 10, 14, 13, 17, 16, 15, 4
<b>Type: Autonomous</b>			
Study of proposed materials, preparation of exercises and suggested activities	90	3.6	3, 2, 5, 7, 9, 11, 12, 10, 14, 13, 17, 16, 15

## Evaluation

The evaluation will have two components:

The final exam: (see faculty schedule of exams) (50% of the grade). Mid-term theory tests might be conducted. Continuous assessment of the activities suggested in the course: (50% of the grade).

The continuous assessment is composed of three activities:

-Practical sessions on the use of spreadsheets and relational databases (40% of the continuous assessment).

-Exercises on the use of the ERP system SAP (30% of the continuous assessment). Attendance to at least 3 of the 4 SAP practical sessions is mandatory to pass the course.

-In-class activities, case studies and student participation (30% of the continuous assessment).

To pass the course, a minimum score of 3 is required in each of the two components (final exam and continuous assessment).

The final grade is the weighted average of these two components. After applying these weights, a mark of 5 or higher qualifies to pass the course.

A Student who did not participate in any evaluation activities will be graded "Not Assessed".

At the end of the course, each teacher will publish the final grades and date, time and place of review of the examination.

Students with a grade between 4.0 and 4.9 can to attend a re-sit exam as per school calendar.

## Evaluation activities

Title	Weighting	Hours	ECTS	Learning outcomes
Continuous Assessment	50%	6.5	0.26	3, 2, 5, 1, 6, 7, 9, 11, 8, 12, 10, 14, 13, 17, 16, 15, 4
Final exam	50%	1	0.04	5, 7, 9, 11, 8, 10, 14, 13, 15, 4

## Bibliography

Laudon, KC, Laudon, JP (2008), "Management Information Systems", 14<sup>th</sup> edition. Ed. Pearson Education

HART-DAVIS, G. (2007): "Excel 2007 step by step." Ed. McGraw-Hill