1. Key Information		
Module Code: 13625	**Module Title:** Information Systems	
Credit Points: 4	**Module Status:** Compulsory	**Module Block:** Technologies in company
Course Title: BSc in Engineering and Management		**Module Theme:** Auxiliary Technologies

2. Lecturer:	David Ortega	Tutorial Hours:	By appointment

3. Required Reading:	
Introduction to Information Systems, 5th Edition International Student Version	R. Kelly Rainer, Brad Prince, Casey G. Cegielski. ISBN: 978-1-118-80855-9, 2014.
Processes, Systems, and Information: An Introduction to MIS, Global Edition (2nd Edition)	David Kroenke, Earl McKinney. ISBN: 978-1292059419, 2014.
An Introduction to Information Systems: Organizations, Applications, Technology, and Design	David Whiteley. ISBN: 978-0230370500, 2013.
Essentials of MIS, 12th Edition	Kenneth C. Laudon, Jane P. Laudon. ISBN: 978-0-13-423824-1, 2017
Fundamentals of Database Systems (7th edition)	Ramez Elmasri, Shamkant Navathe. Ed. Pearson Addison Wesley, 2016.

4. General overview of the module

Information Systems is a highly descriptive introductory course to the applications of the Information and Communication Technologies (ICTs) into business processes, and its exponentially growing importance in modern enterprises.

This is an introductory subject in the sense that the technical details of the technologies studied are not addressed. However, it will be a very broad spectrum course, which will cover the most important ICTs that have the greatest impact into business processes in modern enterprises. The scope is then comprehensive, ranging from ICTs theoretical foundations to their application methods and real examples of their applicability to business processes.

With a particularly practical approach and fully oriented to the applicability of ICTs to business processes in the enterprise, we will discuss real use cases, and will visit important companies that make use and have integrated cutting edge ICTs in their business processes; an opportunity to get to know first-hand the applicability of these technologies. We will also have practical lessons in which students will have the opportunity to play and interact with the most important software application packages for Business information management and analysis systems in modern enterprises.

5. Recommended prior knowledge

Basic computer skills

Basic programming skills

6. Module objectives – Learning outcomes

Basic and General Competences
03 - Define, solve and expose systemically complex technical problems
06 - Ability to make decisions in environments of business uncertainty and uncertainty
CB2 - Students can apply their knowledge to their work or vocation in a professional way and possess the skills that are usually demonstrated through the elaboration and defense of arguments and problem solving within their area of study.
CB4 - Students can transmit information, ideas, problems and solutions to a specialized and non-specialized audience
CB5 – The students have developed those learning skills necessary to undertake further studies with a high degree of autonomy.
Specific Competences
03 - Plan the implementation of business strategies
05 - To design strategies of management of the innovation applying the techniques, models and suitable tools
12 - Manage the information of a company using the appropriate technology and systems.
15 - Apply the basic knowledge on programming of computers, operating systems, databases and information systems in the company

7. Teaching and learning units

Unit	Schedule
	Sessions
0. Overview and presentation	
1. Introduction to Information Systems ▪ Overview of Computer-based Information Systems ▪ How Does IT Impact Organizations? ▪ Importance of Information Systems to Society	
2. Strategic Management of Information Systems ▪ Business Processes ▪ Business Process Reengineering, Business Process Improvement, and Business Process Management ▪ Competitive advantage via Business Processes	
3. Data and Knowledge Management. Intellectual Capital ▪ Data Management ▪ Big Data ▪ The Database Approach ▪ Database Management Systems ▪ Data Warehouses and Data Marts ▪ Knowledge Management	
4. ICT: Infrastructure and Datacentres ▪ Introductions ▪ History ▪ Facility (environmental) systems ▪ Systems infrastructure: Computing, Storage and Networking ▪ The Cloud ▪ SaaS, PaaS and IaaS	
5. ICT: Hardware and Software ▪ Hardware ▪ Software ▪ Application Software	
6. Telecommunications and Networking ▪ What is a Computer Network? ▪ Networks Fundamentals ▪ The Internet and the WWW ▪ Network Applications ▪ IP addressing fundamentals	
7. BI. Business Intelligence and Decision support systems (DSS) ▪ Manager and Decision Making ▪ What is Business Intelligence? ▪ BI applications for Data Analysis ▪ BI applications for presenting results ▪ Information System within the Enterprise. ERPs and its application to business management ▪ Transaction Processing Systems ▪ Functional Area Information Systems ▪ ERP Systems ▪ ERP Support for Business Processes ▪ Reports	
8. Emerging technologies and changing paradigms ▪ E-commerce and e-business ▪ Cloud Computing ▪ Mobile communications ▪ Social Media ▪ Artificial Intelligence	

8. Teaching and learning methods

Unit	Theory (Classroom)	Practical (Classroom)	Practical (Laboratory)	Practical (Classroom)	Practical (ICT)	Self-guided study	TOTAL HOURS
0	1						1
1	1	1	0,5			7	9,5
2	3	1			0,5	8	12,5
3	1	1			0,5	7	9,5
4	4	1	1			7	13
5	4	1	1			7	13
6	2	0,5			1	7	10,5
7	3	0,5			1	7	11,5
8	1	0,5			1	7	9,5
9	3	1	1			7	12
10	1	0,5	0,5			6	8
TOTAL HOURS	24	8	4	0	4	70	110

9. Assessment

Overview	Nº of activities	Weighting (%)
Continuous assessment: • Academic assignments: ▪ Opening Cases to discuss in class before every lesson. ▪ Works related with Closing Cases for every lesson. ▪ Projects and/or works related with Information Systems. • Quiz tests made in class	**4**	**40%** 30% 10%
Synthesis tests (exams): Two tests: • Quiz test. • Questions (both theoretical and practical contents) • A 1st general call (in May). • A 2nd general call for recovery (in July). The 1st general call may include all didactic units. The 2nd general call may include all didactic units.	**2**	**60%** 20% 40%

Student evaluation will consist of both continuous and summative assessments:

1. *<u>Continuous assessment:</u> The submission of practical work either carried out individually or in groups and participation in the different activities both inside the classroom, such as the analysis, summation and discussion of required readings, and outside including company visits, will account for this mark. This part of the assessment carries a weighting of 40% towards the final mark.*

2. *<u>Summative assessment</u>: These tests can combine both theoretical and practical content. This part of the assessment carries a weighting of 60% towards the final mark.*

Continuous assessment is attendance based and non-recoverable. Therefore, the mark obtained for this part of the assessment will serve for both the first summative assessment and any subsequent repeat if required. The repeat will only be available at the end of the semester.

In order to pass the module an average of more than 5 in summative tests must be obtained. The final mark will be calculated by the average weightings of the summative assessment in combination with the continuous assessment. The final mark achieved must be 5 or above to pass the module.

Attendance is compulsory to ensure that you extract the most value from the module and meet the learning requirements. Therefore, session absence accounting for more than 15% of the prescribed hours will result in the inability to be awarded a mark for continuous assessment. Consequently, the maximum mark that can be achieved will be that obtained solely from the summative assessments.

Students enrolling in the module for the second time will receive specific instructions from their lecturer on what is required for them to pass the continuous assessment element. The final mark will be obtained by combining the

summative assessment (80%) and the continuous assessment (20%), having to gain a final mark equal to or greater than 5 to pass the module.

All students must comply with the rules of writing, spelling and grammar in the development of their work and their assessment tests.

**Guía Docente Provisional*