1. Key Information		
Module Code:13621	**Module Title:**Supply chain design	
Credit Points: 6	**Module Status:**Compulsory	**Module Block:**Business Technologies
Course Title:BSc in Engineering and Management		**Module Theme:**Logistics and manufacturing

2. Lecturer:	Juan Del Agua Navarro	**Tutorial Hours:**	Friday, 4:30 p.m. to 6:30 p.m.

3. Required Reading:	
Supply chain management. Strategy, Planning, and Operation. Pearson Education.	Sunil Chopra & Peter Meindl
Supply chain logistics management. Mc Graw Hill.	Donald J. Bowersox, David J. Closs, M. Bixby Cooper
Essentials of Supply Chain Management. John Wiley & Sons.	Michael Hugos.

4. General overview of the module

The subject provides the student the basic information to understand the structure and operation of a supply chain as a whole, as well as each of its structural nodes (production systems, warehouses,and transport systems).
Appropriate methodologies and tools for decision making will be provided at the different levels of supply chain design. As a result, the student will learn to identify the main variables that influence the performance of any process in the supply chain, in order to make the more convenient design, according to the objectives of the company involved.
Specifically, decisions related to the definition of supply chain strategy, selection of production, warehouses and transportation systems, selection of locations, as well as the allocation of roles and capacity of each structural element of the supply chain.

5. Recommended prior knowledge	
Code	*Module*
Notrequired	

6. Module objectives – Learning outcomes
Basic and general competencies
CB2 - That students are able to apply their knowledge to their work in a professional manner and have the capabilities typically demonstrated through the preparation and defense of arguments and solving problems within their study area.
CB4 - That students can communicate information, ideas, problems, and solutions to both specialized and nonspecialized public.
CB5.- That the students have developed those learning skills necessary to undertake further studies with a high degree of autonomy
01 – Ability to work in a team in multilingual, multidisciplinary and multicultural environments.
02 – Use the techniques, skills and technological and economic tools necessary for the professional practice of Engineering and Business Management.
04 – Learn to analyze the different elements that interact in the business decision making.
05 - Know how to express oneself in formal, graphic and symbolic languages necessary to be understood in engineering environments and business
06 - Ability to make decisions in an environment of business certainty and uncertainty.
Specific competencies
03 - Plan the implementation of business strategies.
07 - Acquire the necessary knowledge of the supply, production, distribution, and logistics systems of the company
09 - Define the potential of companies to meet the customer's needs.

7. Teaching and learning units

Unit	Schedule
	Session
1. Introduction to the supply chain 1.1.-Overview of the supply chain design activities. 1.2.-Structure and function of the supply chain.	***3***
2. Supply chain typologies 2.1.-How to classify a supply chain. 2.2.-Different supply chain typologies.	**2**
3. Strategy in the supply chain 3.1.-Competitive and Supply Chain Strategies. 3.2.-Achieving Strategic Fit. 3.3.-Expanding Strategic Scope. 3.4.-Drivers of Supply Chain Performance.	**4**
4. Design of structural elements of the supply chain 4.1. Productive systems& Layout 4.2. Warehouse 4.3. Inventory management 4.4. Transport systems 4.5. Unit load and packaging system	**18**
5. Overall design of the supply chain 5.1.-The role of network design in the supply chain. 5.2.-Factors influencing network design decisions. 5.3.-Framework for network design decisions. 5.4.-Models for facility location and capacity allocation.	**3**

8. Teaching and learning methods

Unit	Theory (Classroom)	Practical (Classroom)	Practical (Laboratory)	Practical (Fieldwork)	Practical (ICT)	Self-guided study	TOTAL HOURS
1	2	1				10	13
2	2	1				15	18
3	3	4				30	37
4	7	5			3	25	40
5	18	8			6	25	57
TOTAL HOURS	**32**	**19**			**9**	**105**	**165**

9. Assessment

Overview	Nº of activities	Weighting (%)
Continuous assessment	**2**	**40%**
Academic assignment 1	**1**	**20%**
Academic assignment 2	**1**	**20%**
Exams	**2**	**60%**
Exam 1		**20%**
Multiple choice test	*1*	*10%*
Written open answers	*1*	*10%*
Exam 2		**40%**
Multiple choice test	*1*	*24%*
Written open answers	*2*	*16%*

Student evaluation will consist of both continuous and summative assessments:

1 *Continuous assessment: 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 *Summative assessment: 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.