**COURSE OUTLINE**

# GENERAL

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| **SCHOOL** | **SCHOOL OF SCIENCE** |
| **ACADEMIC UNIT** | **DEPARTMENT OF BUSINESS ADMINISTRATION** |
| **LEVEL OF STUDIES** | **UNDER GRADUATE LEVEL** |
| **COURSE CODE** | **ΠΡ0013** | **SEMESTER** | **WINTER** |
| **COURSE TITLE** |  |
| **INDEPENDENT TEACHING ACTIVITIES** *if credits are awarded for separate components of the course, e.g. lectures, laboratory exercises, etc. If the credits are awarded for the whole of the course, give the weekly teaching hours and the total credits* | **WEEKLY TEACHING HOURS** | **CREDITS** |
| **TEACHING COURSES** | 3 | 5 |
| **LABORATORY** | 3 |  |
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| *Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).* |  |  |
| **COURSE TYPE***general background, special background, specialised general knowledge, skills development* | NONE |
| **PREREQUISITE COURSES:** | ΝΟΝΕ |
| **LANGUAGE OF INSTRUCTION and EXAMINATIONS:** | GREEK |
| **IS THE COURSE OFFERED TO ERASMUS STUDENTS** | YES |
| **COURSE WEBSITE (URL)** | http://eclass.chios.aegean.gr/courses/DBA120/ |

# LEARNING OUTCOMES

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| **Learning outcomes** |
| *The course learning outcomes, specific knowledge, skills and competences of an appropriate level, which the students will acquire with the successful completion of the course are described.**Consult Appendix A* * *Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area*
* *Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B*
* *Guidelines for writing Learning Outcomes*
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| *Supply Chain Management* or *Logistics* is an extension of the Operations Management field. Globalization and the development of international trade has led to geographically disconnected companies cooperating and exchanging products, money and information. The main objective of Management is not anymore restricted within the company; the field concerns itself with the effective administration of a much wider system, the *supply network*, which starts from the initial suppliers to include everyone stage until the product reaches its final consumer.By the end of the course, students should understand and be able to describe:* What a supply chain is;
* The objective aim of Supply Chain Management;
* The meaning of Competitive Strategy;
* The strategic fit between Competitive and Supply Chain Strategies;
* The decisions taken in a supply chain and how they are categorized;
* The drivers of a successful Supply Chain Management;
* The obstacles of success in a supply chain;
* The basic types of distribution networks;
* The advantages and disadvantages of each network type;
* The basic network decisions in a supply chain;
* The factors that affect network decisions;
* How to use Facility Location Models;
* How to use Capacity Allocation Models;
* The role of inventory in a supply chain;
* The main aim of inventory management
* How to calculate the optimal order quantity for one member and one product;
* How to calculate the optimal order quantity and frequency for more than one products;
* What all-unit quantity and marginal discounts are and how to calculate the optimal order quantity;
* How to calculate the optimal order quantity in a supply chain with two members;
* The role of safety stock in a supply chain and the factors affecting it;
* What the product availability measures are;
* How to determine the product availability measures for a given safety stock;
* How to determine the optimal safety stock when product availability measures are given;
* Ways of reducing the safety stock in a supply chain;
* The role of transportation in a supply chain;
* The modes of transport, their characteristics and performance;
* How to assign vehicles to Customers;
* What the Vehicle Routing Problem is and how to solve it;
* The role of information in a supply chain;
* Which decisions require information;
* The effect of information technology in a supply chain;
* The consequences of lack of coordination in a supply chain;
* The obstacles of coordination in a supply chain;
* How to achieve coordination in a supply chain;
* How discounts become a tool of coordination in a supply chain;
* The importance of strategic partnerships and trust between members of a supply chain.
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| **General Competences**  |
| *Taking into consideration the general competences that the degree-holder must acquire (as these appear in the Diploma Supplement and appear below), at which of the following does the course aim?* |
| *Search for, analysis and synthesis of data and information, with the use of the necessary technology* *Adapting to new situations* *Decision-making* *Working independently* *Team work**Working in an international environment* *Working in an interdisciplinary environment* *Production of new research ideas*  | *Project planning and management* *Respect for difference and multiculturalism* *Respect for the natural environment* *Showing social, professional and ethical responsibility and sensitivity to gender issues* *Criticism and self-criticism* *Production of free, creative and inductive thinking**……**Others…**…….* |
| By the end of the course, students will have the following skills:* Map the network of a supply chain;
* Discern push and pull processes;
* Define the push/pull boundary
* Define the competitive strategy of a supply chain;
* Fit the supply chain strategy to the competitive strategy;
* Determine relationships in a supply network -who supplies whom and in what quantities- through the creation and solving of a representative model in LINDO;
* Determine the optimal location and capacity of production centers, warehouses etc. through the Gravity Model, using Excel;
* Determine the EOQ, Cycle Inventory, Flow Time and Turn Over Ratio for a product with stable demand or no discounts;
* Determine the safety stock for random, normally distributed demand;
* Determine the availability measures (product fill rate, cycle service level) for a given safety stock;
* Determine the required safety stock for given availability measures;
* Apply safety stock reducing techniques without reducing availability;
* Assign vehicles to customers, for given volume and distance limits and a number of orders, using the Saving Matrix method;
* Apply optimal vehicle routing;
* Interact with the educational games Beer Game and Risk Pooling.

This course should help students:* Search for, analysis and synthesis of data and information, with the use of the necessary technology
* Decision Making
* Develop models and solution techniques that help the decision process;
* Enhance their abstraction abilities;
* To use Excel, LINDO and other specialized software to Decision Making (or Problem Solving)
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# SYLLABUS

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| **Understanding the Supply Chain (Week 1)*** Definition and examples
* The objective role of a supply chain
* What is Supply Chain Management?
* Decision phases in a supply chain
* Supply chain performance
* Competitive and Supply Chain Strategy Fit
* Drivers of successful supply chain management
* Obstacles in a supply chain

**Supply Network Design (Weeks 2-4)*** Types of Supply Networks
* Network Design
* Factors that affect network design
* Location facility models and capacity allocation
* Locating facilities: the capacitated location model
* Locating facilities: the capacitated location model with single sourcing
* Locating plants and warehouses simultaneously

**Managing Economies of Scale in a Supply Chain (Weeks 5-7)*** The role of cycle inventory in a supply chain
* Economies of scale to exploit fixed cost
* Economies of scale to exploit quantity discounts

**Managing randomness in a supply chain (Weeks 8-9)*** The role of safety inventory in a supply chain
* Determining appropriate level of safety inventory
* Impact of supply uncertainty on safety inventory
* Impact of aggregation on safety inventory

**Transportations in a supply chain (Weeks 10-11)*** The role of transportation in a supply chain
* Factors affecting transportation decisions
* Modes of transportation and their performance characteristics
* Design options for a transportation network
* Routing and scheduling

**Information in a Supply Chain (Week 12)*** The role and importance of information in a supply chain
* Use of information in a supply chain
* Lack of information and the Bullwhip Effect

**Coordination in a Supply Chain (Week 13)*** Effect of lack of coordination on performance
* Obstacles to coordination in a Supply Chain
* Managerial levers to achieve coordination
* Building strategies partnerships and trust within a Supply Chain
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# TEACHING and LEARNING METHODS - EVALUATION

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| **DELIVERY***Face-to-face, Distance learning, etc.* |  |
| **USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY** *Use of ICT in teaching, laboratory education, communication with students* |  |
| **TEACHING METHODS***The manner and methods of teaching are described in detail.**Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, placements, clinical practice, art workshop, interactive teaching, educational visits, project, essay writing, artistic creativity, etc.**The student's study hours for each learning activity are given as well as the hours of non-directed study according to the principles of the ECTS* |

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| ***Activity*** | ***Semester workload*** |
| Lectures |  |
| Practice Sessions |  |
| Obligatory Projects (3) |  |
| Questionnaires |  |
| Case studies presentations |  |
| Educational games |  |
| Terminology analysis |  |
| Final Examination |  |
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| Course total  |  |

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| **STUDENT PERFORMANCE EVALUATION***Description of the evaluation procedure**Language of evaluation, methods of evaluation, summative or conclusive, multiple choice questionnaires, short-answer questions, open-ended questions, problem solving, written work, essay/report, oral examination, public presentation, laboratory work, clinical examination of patient, art interpretation, other**Specifically-defined evaluation criteria are given, and if and where they are accessible to students.* | **Course Assessment*** Projects: 30%
* Case Study: 10%
* Written Exams: 60%
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# ATTACHED BIBLIOGRAPHY

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| *- Suggested bibliography:*1. Michael Vidalis: Logistics: A Quantitative Approach, Publisher Kleidarithmos, 2017, Athens
2. Hugos Michael, *Essentials of Supply Chain Management,* John Willey & Sons, 2011
3. Ronald H. Ballou., *Business Logistics Management,* Publisher Prentice Hall 2004
4. Chopra & Meindl., *SCM Strategy, Planning and Operation*, Publisher Prentice Hall 2016
5. Levi & Kaminsky., Designing and Managing the Supply Chain*,* Irwin-McGraw-Hill 2007
6. P. Brandimarte, G. Zotteri, *Introduction to Distribution Logistics*, Willey Inter Science, 2007
7. Gianpaolo Ghianni, Gilbert Laporte & Proberto Musmanno, *Introduction to Logistics Systems Management*, Willey & Sons, 2013
8. John, Coyle et. *al*., *Managing Supply Chains A Logistic Approach*, Publisher Cengage, 2013

*- Related academic journals:*1. Supply Chain Management: An International Journal
2. Journal of Supply Chain Management
3. International Journal of Logistics: Research and Applications
4. Journal of Business Logistics
5. International Journal of Logistics Management
6. International Journal of Physical Distribution and Logistics
7. Naval Research Logistics
8. International Transactions in Operational Research
9. International Journal of Production Research
10. International Journal of Production Economics
11. Operations and Supply Chain Management: An International Journal
12. International Journal of Business Science & Applied Management
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