**EASTERN MEDITERRANEAN UNIVERSITY**

**Faculty of Engineering**

**Department of Industrial Engineering**

**IENG438 – Fundamentals of Supply Chain Management**

**COURSE OUTLINE**

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| **COURSE CODE** | IENG438 | **COURSE LEVEL** | Third Year |
| **COURSE TITLE** | Fundamentals of Supply Chain Management | **COURSE TYPE** | Area Elective |
| **CREDIT VALUE** | (3,0,0) 3 | **ECTS Credit Value** | 6 |
| **PRE-REQUISITE(S)** | None | **CO-REQUISITE(S)** | None |
| **LECTURER** | Oğuzhan KIRILMAZ | **SEMESTER / ACADEMIC YEAR** | FALL  2023-2024 |
| **e-mail** | oguzhan.kirilmaz@emu.edu.tr | **OFFICE** | IE-B105 |
| **Web link** | <https://ie.emu.edu.tr/en/department/staff/> academic-staff | **Telephone** | 3242 |

**CATALOG DESCRIPTION**

Supply chain management; Performance of supply chain and its measurement; Different structures of supply chains; Planning in supply chain including demand forecasting, aggregate planning, and planning of demand and supply; Planning and managing inventories in supply chain; Information sharing; Designing and planning logistic systems of supply chain. New product development; Planning, managing and controlling of purchasing and logistics systems of supply chain; Strategic orientation toward the design and development of the supply chain; Bull-whip effect; Global strategies; Expert systems for continuous improvement of the supply chain.

**COURSE AIMS & OBJECTIVES**

After this course, students will be able to:

1. Make decisions on every level of supply chain.
2. Understand the structure of a supply chain and the critical points of the structure.
3. Learn the strategic importance of good supply chain design, planning, and operation for every organization.
4. Have basic knowledge of microeconomics necessary to understand the business activities in supply chain.
5. Identify the key factors to be considered when designing a distribution network.
6. Discuss the strengths and weaknesses of various distribution options.
7. Understand the role of network design in a supply chain.
8. Identify factors influencing supply chain network design decisions.
9. Understand the role of forecasting for both an enterprise and a supply chain.
10. Understand the importance of aggregate planning as a supply chain activity.
11. Explain the basic trade-offs to consider when creating an aggregate plan.
12. Understand the role of inventory in a supply chain
13. Understand the role of transportation in a supply chain.
14. Evaluate the strengths and weaknesses of different modes of transportation.
15. Identify the purchasing strategies
16. Another aim is to give understanding of making business for engineering students.

**GENERAL LEARNING OUTCOMES (COMPETENCIES)**

On successful completion of this course, all students will have developed **knowledge** and **understanding** of:

* Supply Chain,
* Marshall cross,
* Methods of designing supply chain,
* Inventory problems in supply chain,
* Bullwhip effect,
* Transportation in supply chain,
* Other problems of logistics in supply chain,
* Market analysis for supply chain.

On successful completion of this course, all students will have developed **their skills in**:

* Analyzing supply chain activities,
* Designing supply chain,
* Supporting the management of supply chain in decisions on the area of logistics.

On successful completion of this course, all students will have developed their **appreciation** of, and respect for **values and attitudes** to:

* Network design,
* Market analysis,
* Decision making in logistics.

**TEXTBOOK**

Chopra, S., & Meindl, P. (2016). *Supply Chain Management: Strategy, Planning, and Operation* (6th ed.) Pearson.

**REFERENCES:**

Decandia, L., Lei, L., Oppenheim, R., & Zhao, Y. (2017). *Managing Supply Chain Operations*. World Scientific Publishing Company

Charles A. Ingene, Mark E. Parry. (2004). *Mathematical Models of Distribution Channels*, Kluwer.

**ASSESSMENT METHOD**

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| --- | --- |
| Quiz 1 | 10% (before midterm) |
| Midterm | 30% |
| Quiz 2 | 10% (before final) |
| Final | 40% |
| Homework | 5% (after midterm) |
| Attendance | 5% |

**ATTENDANCE**

Attendance will be taken every lecture/tutorial session. Note that EMU regulations allow instructors to give a grade of NG to a student whose absenteeism is more than 30% of the lecture/tutorial hours and/or who do not complete sufficient work that are included in the assessment of the course.

Students missing an examination should provide a valid excuse within three days following the examination they missed. One make-up examination will be given.

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| **COURSE CONTENT (**The lecture topics within the semester are as in the following schedule although minor changes are possible) | |
| **Week** | **Topics** |
| **1** | Basic notions in microeconomics |
| **2** | Understanding the supply chain I |
| **3** | Understanding the supply chain II |
| **4** | Supply chain drivers and metrics |
| **5** | Designing the supply chain network I |
| **6** | Designing the supply chain network II |
| **7** | Demand Forecasting in Supply Chain I |
| **8-9** | Midterm Exams |
| **10** | Demand Forecasting in Supply Chain II |
| **11** | Aggregate Planning in Supply Chain |
| **12** | Inventory Management in Supply Chain |
| **13** | Transportation in supply chain |
| **14** | The bull whip effect in Supply Chain |
| **15-16** | Final Exams |

**PLAGIARISM**

This is intentionally failing to give credit to sources used in writing regardless of whether they are published or unpublished. Plagiarism (which also includes any kind of cheating in exams) is a disciplinary offence and will be dealt with accordingly.)