

BAR-ILAN UNIVERSITY
Department of Management
Academic year 2023-2024
SUPPLY CHAIN ANALYTICS

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COURSE DESCRIPTION

Supply chain management has become a main driver for corporate economic performance. Choice of a geographical location, organization of a flow of operations, implementation of a supply program, management of inventory, optimization of product availability, design of a network in a supply chain, determination of a distribution route, etc. These are some of the analytical concerns associated with supply chain management. This course aims to acquire tools to address some of these concerns. Each session will provide with simple analytical framework to optimize supply chain management decision-making.

This course has a dual purpose, namely:

- To identify the basic issues associated with supply chain management,
- To assimilate the main supply chain analytical tools.

The vocation of this course is essentially applicative. The implementation of supply chain management analytical tools will be illustrated using spreadsheet exercises. In addition, a synthesis case will be submitted to the participants during the fourth session of the course.

CLASS FORMAT

Class sessions involve a mix of lectures and applications. During the first session, the main point will be to understand the very nature of supply chain management. The subsequent sessions are devoted to a formal presentation of a specific methodology. The students will then be expected to perform computerized applications. The last sessions will focus on a case study.

EVALUATION

The work provided in this course is based on:

- Assignments by pairs,
- Case study and presentation of the related conclusions by groups of students.

Grades will be based on the quality of the applications related to the following assignments:

- Application session 3	15%
- Application session 4	15%
- Application session 5	15%
- Application session 6	15%
- Application session 8	15%
- Case study sessions 9-10	25%

AGENDA

SESSION 1 – Supply chain inefficiencies

Wed. 10/01 18:00-20:00

In this session, we identify the main supply chain's inefficiencies and explain how the corporate performance may be improved by supply chain coordination initiatives.

SESSION 2 – Supply chain inefficiencies (Cont.)

Wed. 17/01 18:00-20:00

SESSION 3 – Geographical location choice

Wednesday 24/01 18:00-20:00

In this session, we describe the decision-making process for a geographical location and characterize some common approaches for location choice.

Application: Excel

SESSION 4 – Optimal level of product availability

Wed. 31/01 18:00-20:00

In this session, we determine the optimal level of product availability in a supply chain both for seasonal and continuously stocked items. Further, we identify the main levers to improving supply chain profitability and suggest some contractual devices for supply chain coordination.

Application: Excel

SESSION 5 – Transportation issues in the supply chain

Wed. 07/02 18:00-20:00

In this session, we explain how transportation decision-making should take into account supply chain issues. We also provide with methodologies for routing in transportation networks.

- Application: Excel

SESSION 6 – The design of a network in a supply chain

Wed. 14/02 18:00-20:00

In this session, we develop a framework for optimizing network design decisions. The framework will prove to be useful to solving various network issues as facility location and capacity allocation decision.

- Application: Excel

SESSION 7 – Supply quality management and control

Wed. 21/02 18:00-20:00

In this session, we characterize the main steps to design an acceptance sampling plan agreeable to the supply chain members.

SESSION 8 – Supply quality management and control (Cont.)

Wed. 28/02 18:00-20:00

- Application: Excel

SESSION 9 – Case study: The Poseidon adventure

Frid. 23/02 08:00-10:00

Small groups of students will be assigned the design of a supply chain policy project during the first part of the session. A brief presentation of the project to the class is scheduled for the second part of the session.

SESSION 10 – Case study: The Poseidon adventure (Cont.)

Frid. 08/03 08:00-10:00

REFERENCES

- SILVER, E.A., PIKE, D.F., THOMAS, D.J. – Inventory and Production Management in Supply Chains, Taylor and Francis, 2017, 4th edition.
- HUGOS, M. H. – Essentials of Supply Chain Management, Wiley, 2018, 4th edition.
- CHOPRA, S. & MEINDL, P. - Supply Chain Management: Strategy, Planning and Operations, Pearson, 2019, 7th edition.