



Operations Management

General data

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| Course code: | B19B05E |
| ECTS credits: | 7 |
| Type of the course: | Core module |
| Semester: | Spring, Semester 6 |
| Course restrictions: | Quantitative Methods course is recommended to be met before taking this module. |
| Course leader (with availabilities): | Zsuzsanna Hauck, Dr. hauckzs@tkk.pte.hu +36 72 501 599/ 63153 |
| Further lecturer(s) (with availabilities): | Dóra Longauer Longauer.dora@tkk.pte.hu +36 72 501 599/ 23142 |

1. Description and aims

The source of success at the majority of top companies worldwide is inevitably based on outstanding products/services and/or efficient operations processes. Thus, operations are one of the most important functions in a company. Additionally, any activity that has outcome is a process and the knowledge and skills provided by operations management can be applied in many other functional areas as well. This line of argument describes the basic rationale of the module.

2. Course Intended Learning Outcomes (CILOs)

Upon successful completion of this module, the student will be able to:

1. Use the main principles and key expressions of operations management (*PILO1*),
2. Analyse the role of operations in the value creation process and have the knowledge to recognise different operations systems required to help achieve company aims (*PILO1*),
3. Compare different methods and implement learnt material to business problems (*PILO2, PILO3*),
4. Demonstrate accuracy in quantitative methods to support decisions (*PILO3, PILO4*)
5. Show skills in designing and controlling operations systems, making long, medium, and short-term decisions (*PILO3, PILO4*),
6. Demonstrate awareness of economic, social and environmental aspects in the decision making process and provide with sustainable and resilient solutions. (*PILO08*)

(The remarks in brackets express each CILO's connection to the Program Intended Learning Outcomes (PILOs).)

3. Content, schedule

The discussion of topics is divided into the following chapters:



1. Using operations to compete.
2. Developing missions and strategies.
3. Major process decisions.
4. Capacity planning.
5. Facility location.
6. Facility layout.
7. Aggregate planning.
8. Material requirement planning.
9. Managing inventory.
10. Supply chain management.
11. Toyota Production System.
12. Lean service systems.
13. Sustainability issues and solutions in production, inventory and supply chain management.

Planned schedule 2024 spring:

| Date | Lecture (Mon 9:30) |
|------------|-------------------------------|
| 2024.02.05 | OM intro |
| 2024.02.12 | Mission and strategy |
| 2024.02.19 | Mission and strategy cont. |
| 2024.02.26 | Process strategy |
| 2024.03.04 | Capacity planning |
| 2024.03.11 | Location and layout decisions |
| 2024.03.18 | Midterm exam |
| 2024.03.25 | Aggregate planning |
| 2024.04.01 | <i>Spring Break</i> |
| 2024.04.08 | Supply chain management |
| 2024.04.15 | Inventory Management |
| 2024.04.22 | Toyota Production System |
| 2024.04.29 | Lafarge SCM: factory visit |
| 2024.05.06 | Sustainable OM: Guest lecture |

4. Learning and teaching strategy, methodology

This module will be taught through weekly lectures and interactive seminars directly followed by each other. Lectures will introduce students to various theories associated with Operations Management. The shortened version of these will be available in online tutorials. During the interactive seminars, students will receive case studies (if time permits: simulations) and calculation exercises related to the weekly topic. They will have to come up with suggestions using the theory from the lectures so far. Thus, continuous learning is required. Lecture slides and other materials will be available on Moodle. At the end of the semester, a live business case will be solved by students with the assistance of an internationally operating but local company.



5. Assessment

Formative assessment elements: Oral feedback on in-class activities, discussion of the solution of case studies and practical exercises solved during the classes.

Summative assessment elements:

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|------------------------------|------|-------------------------|------|
| Individual Assessment | 85 % | Group Assessment | 15 % |
|------------------------------|------|-------------------------|------|

| Name of the element | Weight | Type | Details | Retake opportunity | Req.* | Related CIOs |
|-----------------------|----------|------------------------------|---|------------------------|-------|--------------|
| Coursework exercises | 15% | course-work, group, written | Case studies and projects during the seminars. | none | no | 1,3,5,6 |
| Midterm exam | 15% | written exam, individual | A written exam based on topics 1-5 with theoretical questions, calculations, and possibly a case study. | none | no | 1,2,4,5,6 |
| Final exam | 70% | written exam, individual | A written exam based on all chapters. Same structure as the midterm but more questions in all three types of exercises. | one retake opportunity | yes | 1,2,4,5,6 |
| Extra points in class | max. +5% | individual course-work, oral | Extra points during classes for excellent solutions or comments. | none | no | 1,2,3,4,5,6 |

* Req.: Completion of the element is required to pass the course, irrespective of the performance in other elements.

6. Learning materials

- Essential:

HEIZER, J. - RENDER, B. M. - MUNSON, C.: Operations Management: Sustainability and Supply Chain Management, Pearson, 13th, Global Edition 2020

HAUCK, ZS. – KISS, V.: Operations Management, collection of exercises 2020, ISBN: 9789636424558 (available in Moodle)

- Cases:

Chad's Creative Concepts- *Krajewski & Ritzmann & Malhotra (2016); Operations Management, Pearson*

Imaginative Toys- *Krajewski & Ritzmann & Malhotra (2016); Operations Management, Pearson*

Bruegger's Bagel Bakery- *Krajewski & Ritzmann & Malhotra (2016); Operations Management, Pearson*

Furniture Ltd- translation form: Temesi & Varró (2007): Operációkutatás

Further Up-to-date case studies are provided weekly in class



- Recommended:
OM blog providing case studies for the book: <https://heizerrenderom.wpcomstaging.com/>
KRAJEWSKI, L.J. – MALHOTRA, M.K. – RITZMAN, L.P.: Operations Management: Processes and Supply Chains, 12th Global Edition, Pearson 2019
CHOPRA, S.: Supply Chain Management: Strategy, Planning, and Operation, 7th Global Edition, Pearson 2019

7. Further information

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| International aspects embedded with the course |
| <ul style="list-style-type: none">- Global Edition book- international case studies- guest lecture by professionals with international experience (the companies are local but are operating in an international environment, raising issues regarding international supply chains that they are members of) |
| Ethics, Responsibility & Sustainability (ERS) aspects embedded with the course |
| All topics include ERS-related discussion, e.g. <ul style="list-style-type: none">- responsibility of providing the healthcare industry with good quality items- considering CO2 emission when deciding on locations- optimizing the operation of supply chains- environmental impact of overproduction- recycling strategy |
| Connections to the world of practice of the course |
| One or two guest lectures per semester as time allows, past examples include: <ul style="list-style-type: none">- Network optimization platform in the cement industry: the case of Lafarge company- Competitive priorities and process strategy at Körber- Agile operations at IT Solutions Hungary |