### Operations Management and Factory Physics (in English)

#### LLSMS2032

<table>
<thead>
<tr>
<th>Credits</th>
<th>Hours</th>
<th>Quarters</th>
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<td>5.0</td>
<td>30.0</td>
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**Teacher(s):** Corluy Olivier (compensates Chevalier Philippe) ; Chevalier Philippe ;

**Language:** Anglais

**Place of the course:** Louvain-la-Neuve

**Prerequisites:**
- an introductory course in operations management
- a probability course

**Main themes:**
This course presents the key underlying principles that drive operations efficiency in a factory, in services or in a supply chain. These principles can be used to gain valuable insight for complex real-life problems.

**Aims:**

1. **Corporate citizenship**
   - 1.1. Demonstrate independent reasoning, look critically
   - 1.3. Decide and act responsibly

2. **Knowledge and reasoning**
   - 2.1. Master the core knowledge of each area of management.
   - 2.2. Master highly specific knowledge
   - 2.4. Activate and apply the acquired knowledge
   - 2.5. Master highly specific knowledge

3. **A scientific and systematif approach**
   - 3.1. Conduct a clear, structured, analytical reasoning
   - 3.2. Collect, select and analyze relevant information
   - 3.3. Consider problems using a systemic and holistic approach
   - 3.4. Perceptively synthesize 'demonstrating a certain conceptual distance

4. **Innovation and entrepreneurship**
   - 4.1. Identify new opportunities, propose creative and useful ideas
   - 4.4. Reflect on and improve professional practices.

5. **Work effectively in an international and multicultural environment**
   - 5.1. Understand the inner workings of an organization

6. **Teamwork and leadership**
   - 6.1. Work in a team...

7. **Project management**
   - 7.1. Analyse a project within its environment and define the expected outcomes
   - 7.2. Organize, manage and control the process
   - 7.3. Make decisions and take responsibility for them in an uncertain world

8. **Communication and interpersonal skills**
   - 8.1. Express a clear and structured message
   - 8.2. Interact and discuss effectively
   - 8.3. Persuade and negotiate

9. **Personal and professional development**
   - 9.1. Independent self-starter
   - 9.4. Quick study, lifelong learner

**Evaluation methods:**
- Homeworks
- Case study
- Written exam (open book)

**Teaching methods:**
- Lectures
- Exercices/PT
- Problem based learning
- Company visit
- Real life case study in a company

**Content:**
- ANALYZING AND UNDERSTANDING THE EFFECT OF VARIABILITY FOR OPERATIONS MANAGEMENT
  - Variability basics
  - Push and Pull production systems
  - Total quality
  - Development of simulation models for production systems
  - MANAGING OPERATIONS IN A PLANT
| Pull models                      |
| Shop floor controls and scheduling |
| MANAGING OPERATIONS FOR SERVICES |
| Queueing models                  |
| Non-stationary systems           |
| MANAGING OPERATIONS IN A SUPPLY CHAIN |
| Managing inventory               |
| Managing capacity                |
| Managing time                    |
| At home activities:              |
| 1 Exercices to prepare the lecture |
| 1 Paper work                     |

### Bibliography:

: No TEXTBOOK. SLIDES compulsory. BOOK: Factory Physics, W. Hopp, M. Spearman, Mc Graw-Hill, 2008 compulsory and available on line. Supports available on line are on ICAMPUS.

### Other Infos:

- Other information
- Prerequisites (ideally in terms of competencies)
  - Introduction to operations management, production management and operations research.
- Evaluation:
  - Case solutions, class participation and an oral exam
- Support
- References:
  - Provided during the class
- Internationalisation:
  - 1 international content (does the course tackle international issues related to the course content?)
  - 1 international guests
  - 1 international case study
- Corporate features:
  - 1 case study
  - 1 company visit
- Skills:
  - 1 team work
  - 1 problem solving
  - 1 decision making
  - 1 project management
  - 1 critical thinking
- Techniques and tools for teaching and learning:
  - 1 modeling
  - 1 simulation
  - 1 quantitative methods
  - 1 mathematics

### Faculty or entity in charge:

- CLSM
### Programmes / formations proposant cette unité d'enseignement (UE)

<table>
<thead>
<tr>
<th>Intitulé du programme</th>
<th>Sigle</th>
<th>Credits</th>
<th>Prerequis</th>
<th>Acquis d'apprentissage</th>
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