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## 2EL6170 – Production and flow management

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**Department:** CAMPUS DE RENNES  
**Language of instruction:** FRANCAIS  
**Campus:** CAMPUS DE RENNES  
**Workload (HEE):** 60  
**On-site hours (HPE):** 35,00  
**Elective Category :** Business Sciences  
**Advanced level :** No

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### Description

The aim of this course is first of all to introduce students to the main concepts of production and flow management, in order to

- better understand current issues and the role of production management in organizations
- get the same language as business leaders

Its second objective is to familiarize students with the methods and tools applicable to production and flow management, mainly :

- flow and stock control methods
- methods for improving industrial performance (lean manufacturing, etc.).

### Quarter number

SG8

### Prerequisites (in terms of CS courses)

None

### Syllabus

- Products and resources, flows and capacity in the company
  - Manage products and resources in the company
    - Managing products: flow decisions
    - Managing resources: capacity decisions
    - Ensure synchronization of flows and capacities over time
  - Data associated with products and resources
    - Technical data



- Activity data
- Flow and stock control
  - Inventory management
    - Inventory Management Models for Independent Demand
    - Choosing a model
  - Flow planning
    - Comprehensive planning: development of ICP
    - Detailed planning: developing the PDP
  - Flow programming
    - MRPO Logic
    - MRP1 logic: load-capacity matching
  - Flow scheduling
    - Centralized Scheduling
    - Decentralized Scheduling (Kanban...)
  - Demand Driven approaches - a credible synthesis?
- Improvement of industrial performance (lean logic)
  - Measuring industrial performance
    - Calculation criteria
    - SRTs and other indicators
  - The Just-A-Time (lean logic)
    - Actions at the product level
    - Resource actions
    - Actions at the level of relations with partners - link with Supply Chain Management and partnership methods (GPA, GMA, CPFR...) + new tools (Blockchain)

### **Class components (lecture, labs, etc.)**

The course alternates between lectures and tutorials.

### **Grading**

This module will be evaluated by a written exam.

### **Resources**

The course (a mix of lectures and working classes) is given by a team of professors from the Institut de Gestion de Rennes.

### **Learning outcomes covered on the course**

By the end of this course, students will be able to:

- Establish the links between the Production Management function and, in the broadest sense of the word, logistics with the different departments of the company.
- Identify the main problems of logistics (especially industrial logistics) in organizations.



- Use the main methods of stock management and flow control and analyse their consequences for the company.
- Identify the methods of stock management and flow control best suited to a given environment.
- Using some productivity indicators in industrial logistics (TRS...)

**Description of the skills acquired at the end of the course**

C1.1 Examine a problem in full breadth and depth, within and beyond its immediate parameters, thus understanding it as a whole. This whole weaves the scientific, economic and social dimensions of the problem

C2.5 Master the skillset of a core profession within the engineering sciences (at junior level)

C3.7 Make pragmatic and informed choices with the aim of producing tangible results.