



MASTER'S DEGREE  
PROGRAMME // M2



# INDUSTRIAL ENGINEERING

*Advanced Industrial  
Engineering Methods  
for the Industry of the  
Future*



# MASTER IN INDUSTRIAL ENGINEERING

*Advanced Industrial Engineering Methods for the Industry of the Future*

2 semesters taught in French, including 4 months of internship in co-accreditation with École Centrale de Lyon and Ecole des Mines Saint-Etienne.

## Description

The economic context is forcing companies involved in the production of goods and services to innovate in terms of design, production and organizational tools.

Today, production and logistics activities are taking advantage rapidly of new technologies (product lifecycle management, information and communication technologies, development of micro/nano-fabrication, automation of production systems, etc.) and the new sectors, such as healthcare production, represent strong challenges for the «industrialization» of their practices.

The challenge is to optimize cost-quality-delivery-reliability in order to design the product in the shortest possible time, manufacture products at the best price, with the best quality and in the shortest possible time, while ensuring the best possible reliability of production equipment and minimizing environmental impact.

## Objectives

Train students in modern industrial engineering and operations research techniques covering the entire product and production systems engineering chain, in particular the scientific tools for :

- modeling and analysis of products and production systems,
- performance evaluation,
- optimal product and system design and resource sizing,
- production planning, organization and logistics,
- equipment maintenance.



The programme is based on the major fields of application addressed by the research teams of the laboratories involved, such as care production systems, microelectronics manufacturing, transport and energy, to bring students face to face with the complexity of different applications.

### COMMON COURSES\*

12 ECTS



*Supply Chain Management*



*Optimization and decision support*



*Reliability and stochastic processes*

### SPECIALIZATION COURSES\*

12 ECTS



*Performance evaluation and scheduling*



*Production and logistics systems planning and scheduling*



*Maintenance of complex systems*

### OPENING COURSES\*

6 ECTS



*English for business communication level 2*



*Internship preparation. Bibliography*

### INTERNSHIP\*

30 ECTS



*Minimum 20 weeks*



*Written report*



*Oral presentation*

\* All the courses are taught **exclusively in French**