



**Welcome to  
MINES Saint-Étienne!**



**MINES  
Saint-Étienne**

Une école de l'IMT

# Industrial Engineering and Operations Research

Master of Science

[www.mines-stetienne.fr](http://www.mines-stetienne.fr)



**INSPIRING  
INNOVATION**  
SINCE 1816

**A Master of Science** (National Masters' Degree)  
*Accredited by the French Ministry of Higher Education and Research at the **École Nationale Supérieure des Mines de Saint-Étienne**, France, and 3 institutions of the **COMUE of Lyon University** (UJM, ECL, ENISE)*

 **Taught in English**

## **A new opportunity for international students**

- Taught in English (the French-taught course is also available for foreign student)
- One year programme
- Master of science diploma
- A key step for PhD studies

**Develop high level skills on current industrial engineering methods while covering strategical, tactical and operational decision levels.**

**Modern enterprises are facing the challenge of producing quickly at low costs with high quality and in short delay while ensuring high reliability of its equipment and reducing environmental impact.**

Industrial Engineering and Operations Research meet these challenges with innovative scientific technologies for efficient design, operation and maintenance of manufacturing systems.

This one-year Master of Science programme deals with applications of advanced techniques of industrial engineering and operations research for decision making, especially scientific methods for modelling, performance evaluation, design, production planning and scheduling, supply chain management and maintenance of both manufacturing, service and logistical systems.

Special attention will be given to major problems raised in the design and operation of manufacturing and service systems. Thanks to close relationships of the research labs with some major industrial partners, students will learn how to apply these cutting-edge techniques and how to face the complexity of various industrial sectors such as semiconductor manufacturing, health care delivery systems, automotive industry and transportation.



## Course structure

- Operations management of production systems and supply chains (4 ECTS credits)
- Optimisation and decision support (4 ECTS credits)
- Enterprise modelling and engineering (4 ECTS credits)
- Design and performance evaluation of manufacturing systems (4 ECTS credits)
- Planning and scheduling of production and logistics systems (4 ECTS credits)
- Customer-centred strategies for Supply-Chain Management (4 ECTS credits)
- Literature survey study (3 ECTS credits)
- English courses (3 ECTS credits)
- Conferences and seminars
- Research internship (>=20 weeks) (30 ECTS credits)

## PhD Opportunities

- Home care planning
- Decision support for the management of temporal constraints (PhD with STMicroelectronics)
- Production planning with uncertainties related to machine failures (PhD from University of Technology of Troyes)

## Internship Opportunities

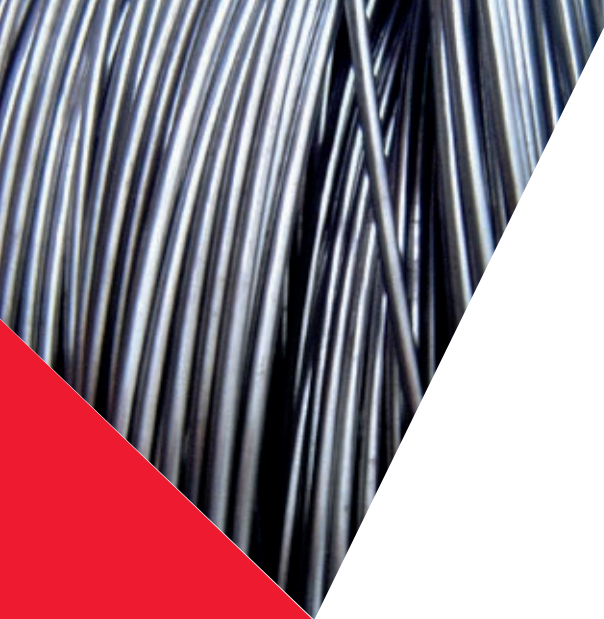
- Modelling and optimisation in project management: applied to consulting
- Implementation of a new kitting feature in Advanced Planning and Scheduling software

## Job Opportunities

- Research & Development in Production and Logistics
- Management of enterprises
- Consulting

## Requirements for applicants

- Prior successful completion of a first year of a Master's Degree in theoretical and / or applied science, or equivalent diploma (at the home university or Ecole des Mines) / or 240 ECTS validated
- A good command of English is mandatory



**With the collaboration of the  
research laboratory  
LIMOS, UMR CNRS 6158  
which gathers:**

**Research field:**

Operations Research, Mathematical models to optimize complex product and production Systems, Industrial Engineering, Computer Science

**90 faculty members**

**92 PhD Students**

**Main industrial partners:**

Casino Group, Michelin, Renault Group, SNCF (French National Railway Company), St-Etienne Health Centre, STMicroelectronics

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**La Région**  
Auvergne-Rhône-Alpes



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