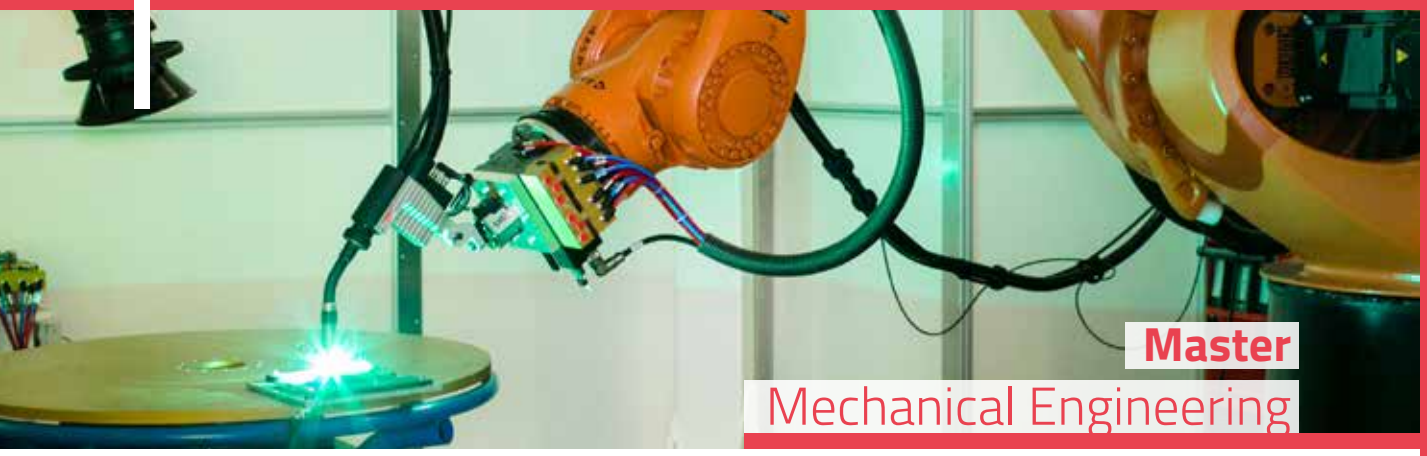
SHAKE THE FUTURE.

CENTRALE NANTES



Master

Mechanical Engineering

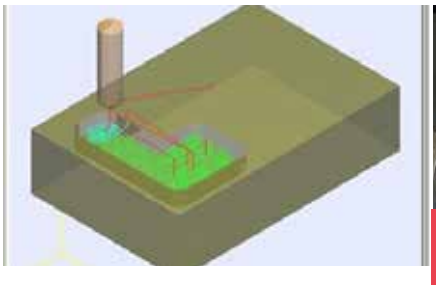
ADVANCED MANUFACTURING

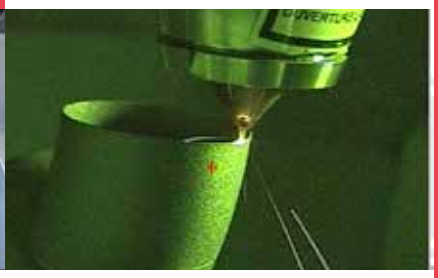
Graduate programme | **Master** in Sciences, Technologies and Health

OBJECTIVES

This Master programme develops skills for providing innovative and optimized solutions in the advanced design and manufacturing of products and structures for both research and industry.

The courses rely on both theoretical and practical aspects and cover the following areas: mechanical design of innovative mechanisms and products and customer-oriented design of products. Technical, human and economic factors are taken into account.





SKILLS

Specialism-specific

- Develop innovative processes and products for composite and metallic materials and structures
- Design products adapted to the processes
- Work in an integrated numerical environment and in a design & manufacturing global chain

General

- Identify models, perform simulation and analyse results
- Communicate comprehensive results in a meaningful way
- Undertake bibliographic surveys from international research and professional literature
- Manage or be part of a project

JOB PROSPECTS & FURTHER PHD STUDIES

SECTOR: Aeronautics, Automotive, Transportation, Wind and Marine Energy, Mechanics, Consulting.

FIELDS: Mechanical Engineering, Design, Materials, Advanced Processes, Additive Manufacturing, Research and Innovation.

JOB POSITIONS: Mechanical Engineer, Process Engineer, Design Engineer, Research and Innovation Engineer (post PhD).

Location
Nantes, France -2 hours from Paris

International campus life

87 nationalities

43% international students

Master in Sciences, Technologies and Health

EXAMPLES OF FINALYEAR PROJECTS

5 to 6 month internship in Industry

> Mechatronic design for automotive front seats
> Design optimization for noise reduction of rear axle's bushings
> Modelling and simulation of an electro-hydraulic actuator

5 to 6 month thesis in Research Labs

> Magnetic pulse spot welding between aluminum and steel sheets
> CAD design and prototyping of a reconfigurable 3-PRS parallel mechanism
> Wire additive manufacturing: development of a depositing head

FACULTY, INDUSTRIAL PARTNERS AND RESEARCH LABS

This Master relies on the Centrale Nantes' faculty, staff and research facilities of the GeM Research Institute and the LS2N Research Institute. Centrale Nantes has several industrial partnerships such as with DCNS, STX, Renault, Faurecia, CETIM, CATIA, UGS.

OTHER PROGRAMME INFORMATION

> Length of Studies: 2 years
> Language of instruction: English
> 3 semesters of courses and 1 semester of Master's thesis

Tuition & Fees - Scholarships - Application process - Deadlines

MORE INFORMATION AND FULL PROGRAMME:
www.ec-nantes.fr/masters

CONTACT: master.admission@ec-nantes.fr

CONTENT AND COURSES

(A Master Degree requires the validation of 120 ECTS credits)

M1 - AUTUMN SEMESTER	ECTS
Continuum Mechanics	5
Fluid Mechanics	5
Algorithmics for Engineering Modelling	4
Numerical Methods	4
Vibration and Differential Equations	4
Business Environment	4
Modern Languages	4
M1 - SPRING SEMESTER	**ECTS**
Engineering Materials	5
Constitutive Laws	5
Structural Mechanics	5
Computer-aided Design	5
Mechanical Design	4
Conferences and Initiation to Research	2
Modern Languages	4
M2 - AUTUMN SEMESTER	**ECTS**
Advanced CAD/CAM/CNC	4
Additive Manufacturing and advanced manufacturing processes	4
Design of Experiments methods for manufacturing	4
Optimization in manufacturing engineering	4
Integrated Design Engineering of PSS	4
Multi-physics modelling for processes	4
Modern Languages	4
Project	2
Conferences	-
M2 - SPRING SEMESTER	**ECTS**
Master Thesis or Industrial Internship	30

NB Course content may be subject to minor changes

École Centrale de Nantes, Direction de la communication, november 2019

This Master's programme is accredited by French Ministry of Higher Education.

Liberté • Égalité • Fraternité
RÉPUBLIQUE FRANÇAISE
MINISTÈRE DE L'ÉDUCATION NATIONALE, DE L'ENSEIGNEMENT SUPÉRIEUR ET DE LA RECHERCHE