ARTS ET MÉTIERS

PREPARING YOUNG ENGINEERS FOR THE NEW CHALLENGES OF INDUSTRY 4.0

TALENT BOOSTER FOR THE INDUSTRY OF THE FUTURE
1 ARTS ET MÉTIERS

Overview
ARTS ET METIERS

One of the oldest Engineering Schools in France

Major strengths in:
mechanical, industrial & energy engineering

- 12 locations in France
- 6000 students
- 1100 staff (400 Full-time teaching and research staff)
- 300 : Lecturers from industry
- 14 research laboratories

- Renowned for its close industry links
- Ranked 2nd for the number of start-ups
- Ranked 4th best Engineering School
- Largest Engineering Alumni Association in Europe
12 locations around France: 8 campuses & 4 Research Institutes

STRONG NATIONAL PRESENCE IN EDUCATION RESEARCH & INNOVATION

1806 Châlons-en-Champagne
1901 Cluny
1900 Lille
1912 Angers
1815 Angers
1963 Bordeaux
1943 Aix-en-Provence

Creation of the School by the Duke De la Rochefoucauld-Liancourt
Training and Research on the **overall life cycle of a product:**
from design, conception and production to the product’s recycling.
The School offers training for all: **undergraduate, graduate** and **executive education**

Arts et Métiers ambitions: to address the needs of industrial companies in all economic sectors.
MSC PROGRAMS

1st year core courses*

- Mechanical Engineering
- Industrial Engineering
- Energy Engineering
- Health Engineering

- Material & Engng Sc
  Mechanics & Energetics
  Adv Syst & Robotics
  Mech & Material Engng
  Surfaces & Material Engng
  Plasma & Fusion

- Innovation, design and engng
  Virtual Engng & Innovation
  Decision Sc & Risk Managnt
  Information & System Sc.Knowledge
  Integration in Mech. & Prod.

- Energetics & Environment
  Fluid Mechanics
  Electrical Energy & Sustainable Dev.
  Naval Engineering
  Mech. Sc & Engineering

- Bio Material
  Molec & Cell. Biotherapies
  Bio-engineering & Innov. In Neurosciences
  Bio Imaging
  Bio Mechanics

* mechanics, energetic systems, mathematics, computer science, communication, management and organization, Research project in laboratory, Internship in industry, Intensive French language & culture courses
Activities of 14 laboratories gathered around 20 skills
With **12 sites**, Arts et Métiers is close to the economic players in various fields across the French regions. Each location focuses on different areas of expertise:

- **Lille**: Electrical networks for the future and flexible factory.
- **Paris**: Society challenges (health, technology, usage, energy, product design...).
- **Laval**: Virtual reality processes.
- **Angers**: New manufacturing processes.
- **Bordeaux-Talence**: Aeronautics and sustainable development.
- **Aix-en-Provence**: Renewable energies, nuclear & aeronautics.
- **Châlons-en-Champagne**: Eco industrial challenges.
- **Metz**: Steel, automotive, plastics processing.
- **Chalon-sur-Saône**: Virtual immersion and digital mock up.
- **Chambéry**: Eco design and risk prevention.
- **Cluny**: High speed machining and wood sector.

CAMPUS & RESEARCH INSTITUTES ARTS ET METIERS PARISTECH
Our international partnerships are targeting Education, Research, Innovation and Technology transfer

**Partner Universities**: 150

**Countries**: 47

**Double degree programs**: 75

**Foreign guest professors**: 50

**Dual Master degree programs**: 11

**Dual PhD degrees**: 30

**Students**: Have at least one international academic experience of which 400 with a double degree

**Foreign students**: In the Arts et Métiers campuses

**Students**: Have at least one international academic experience of which 400 with a double degree

**Foreign students**: 900

**Students**: 600
Partnership agreements
Visibility

151-200 Mechanical Eng.

200-250 Graduate Employability in 2019

101-150 in Engineering – Mech. Aeronautical & Manufacturing

350-400 in Material Sc.
International strategic projects for industry of the future

- French Chinese cluster Arts et Métiers
- Arts et Métiers Hub for south east asia
- South american cluster Arts et Métiers
Many Questions

• Attitude with respect to digital?
• Training on new technologies?
• New skills for industry 4.0?
• Soft skills for industry 4.0?
• Entrepreneurship?
• Connection with industry?
• Emerging technologies?
• Partnerships?
• Promote Industry for the students?
Accompanying the industrial revolutions

Industry History

1st industrial revolution

Mechanical Engineering

2nd industrial revolution

Energy Engineering

3rd industrial revolution

Industrial Engineering

4th industrial revolution

Digitalization of practices *Uses*
Arts et Métiers is a concept
Training on new technologies

Opening research platforms to training
Mixing research-training-transfer
DARE THE INDUSTRY!

- Joint work between schools of engineering and professional branches
- Series of interviews with industrials
- Information on news needs of professional skills: communication
- Adjustments in curriculums
Human values for Industry of the Future

- Ability to adopt the culture of an industrial company
- Ability to build a strong and bonded human community
- Ability to uphold the Corporate Social Responsibility
- Ability to anticipate and to accompany changes
Entrepreneurship and business development

« PEPITE » (Pôle Etudiant Pour l’Innovation, le Transfert et l’Entrepreneuriat)
• Student Pole for Innovation Transfer and Entrepreneuriat
• created in 2014 by the French Ministry of Higher Education & Research

« CREDA » – spécialisation 5th year

Graduate course created to help students who wish to develop and validate a professional project in the fields of:
Business development (technical and economic, business management, management of innovative projects and change management)
Business creation (or takeover).
Entrepreneurship is a mindset.
We are looking for the greatest diversity of projects and personalities to find the talent of tomorrow. Each year students organize a study-abroad trip to develop the leadership qualities.
Connecting students to the industry

- Industry engineers teaching in class
- Internships in the industry
- Apprenticeship and « sandwich » studies
- Industry driven projects
- Visits of factories
- Student-industry meeting
- Student involved in research/transfer contracts
- Students accompanying SME in innovation
Emerging technologies in research and training

• Cobotics
• Additive Manufacturing
• Digital Twins & Continuity of the digital chain
• Artificial Intelligence
• Virtual & Augmented Reality
• Digital supply chain
• Renewable energy for the industry

Transfer from research to education
Transfer from research to industry
Partnerships
Partnership with Dassault Systèmes

- 3D Experience: main numerical tool at Arts et Métiers
- Continuity of the digital chain
- 6000 individual accesses to 3D Experience
  - 400 for faculties
  - 5600 for students: including student life activities
- Joint Life long education programs
- Arts et Métiers: 1st academic partner of DS in the world!
Promote industry
Promote industry for women