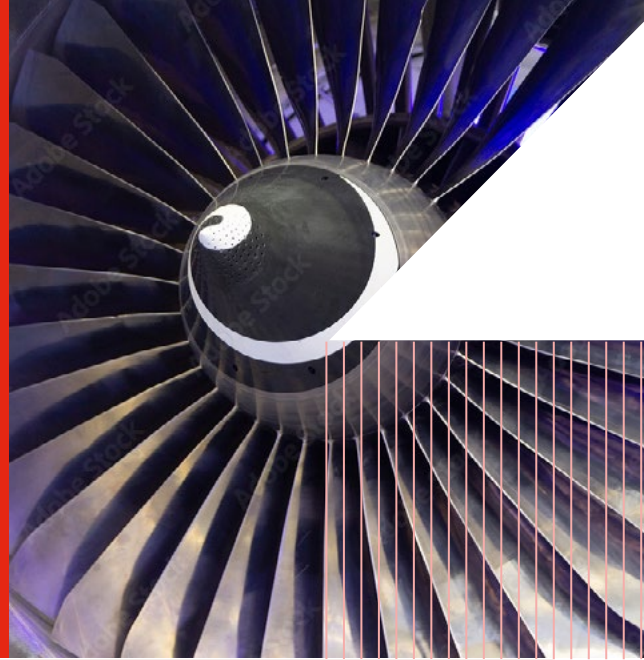




# MSc AERONAUTICAL AND MECHANICAL ENGINEERING



## OVERVIEW

The MSc Aeronautical and Mechanical Engineering (MSc AME) is a high-level international program offered by INSA Rouen Normandie.

Over the course of one year, it trains engineers and scientists specializing in advanced mechanics, aeronautics, energy, and digital simulation, with a strong focus on research and industrial innovation.

- Language of instruction: English
- Duration: 1 year (80 ECTS)
- Format: Full-time, on-campus
- Target audience: International students with a four-year degree (M1 or equivalent)

## PROGRAM OBJECTIVES

The MSc AME aims to train students to be able to:

- Design, model, and analyze complex aeromechanical systems
- Master advanced digital simulation tools (CFD, multiphysics modeling)
- Understand and optimize turbulent flows, heat transfer, and propulsion systems
- Develop expertise in innovative materials and additive manufacturing
- Integrate the challenges of energy transition and emissions reduction
- Thrive in international, scientific, and industrial environments



## KEY STRENGTHS

- Highly specialized program in fluid mechanics, turbulence, and energy
- Teaching provided by expert faculty members and industry professionals
- Direct support from the CORIA laboratory (CNRS UMR 6614)
- Strong preparation for careers in R&D and doctoral studies (CIFRE, ANR, international joint supervision)
- Projects and internships in collaboration with major industrial players (aeronautics, energy, transportation)

- AERONAUTICS
- MECHANICS
- ENERGY
- SIMULATION

# CURRICULUM AND ORGANIZATION

Academic workload: 573 hours

## Structure

- Two academic semesters
- Supervised research project (150 hours - 12 ECTS credits)
- End-of-studies internship (minimum 4 months - 30 ECTS)

## Teaching methods

- Specialized lectures
- Practical work (CFD, optical diagnostics, test benches)
- Research or application projects
- Cross-disciplinary modules (project management, scientific communication, international culture)

# CAREER OPPORTUNITIES

Graduates of the MSc AME program go on to positions such as:

- Fluid mechanics/aerodynamics engineer
- R&D engineer in propulsion, turbomachinery, or energy
- Computational and numerical simulation engineer (CFD)
- Test and experimental bench engineer
- Composite materials and structures engineer
- Data analyst specializing in physical modeling
- Junior researcher/doctoral student (CIFRE, ANR, international thesis)

# TARGET SECTORS

Aeronautics, space, defense, energy, R&D engineering, public and private research, advanced transportation.

# ADMISSION

- Required level: Bac+4 (M1 or equivalent) in engineering
- Language: English level B2 minimum
- Selection: Application (CV, motivation letter, transcripts, etc.) + interview in English
- Target audience: Recent graduates, international students

## ABOUT INSA ROUEN NORMANDIE

Ranked as Normandy's top public engineering school and included among key French institutions, INSA Rouen Normandie plays a major role in the training of engineers in France. Its mission includes education (10 engineer curriculums, 3 apprenticeship programs, 2 master's specialization® degrees), research (8 laboratories) and the spreading of scientific culture in the following fields of expertise: information systems, big data, mathematics, chemistry and processes, risk management and industrial site recovery, energy, propulsion systems, mechanics, industrial performance, civil engineering, and urban design and planning.

INSA Rouen Normandie is a member of the INSA Group, which trains nearly 10% of French engineers each year. Closely tied to the world of industry, INSA has established a large number of partnerships with international organizations.



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