Université Gustave Eiffel

Field of study Sciences and engineering

Training available in

Initial training | Continuing education

How to apply :
https://www.univ-gustave-eiffel.fr/en/formation/applications-and-enrolment/applications

Course venue :
Campus Marne la Vallée - Champs sur Marne - Bâtiment Lavoisier 5 Boulevard Descartes 77420 Champs-sur-Marne

Calendar :
Term starts: end of September in M1 and M2; Term ends: end of May in M1 and mid-February in M2; M2 work placement starts: mid-February; defence: mid-September.

Contacts :
CHENIER Eric (M1-M2)

NICOLAS Xavier (M1)
Academic coordinator

SONNETTE Loren (M1-M2)
Academic secretary
loren.sonnette@univ-eiffel.fr

More information :
For further details :
https://www.univ-gustave-eiffel.fr/international/etudiants-internationaux
Service Information,
Orientation et Insertion Professionnelle (SIO-IP) :

sio@univ-eiffel.fr / Tel : +33 1 60 95 76 76

Université Gustave Eiffel | ifsa INSTITUT FRANCILIEN DES SCIENCES APPLIQUÉES

Master's degree Mechanics
Mechanics

DIPLÔME CONFÉRANT GRADE DE MASTER CONTRÔLÉ PAR L'ÉTAT

Institut Francilien des Sciences Appliquées (IFSA)

Master's degree M1

TO GET THERE

A general Licence degree in mechanics, physics or maths with a suitable foundation in solid and fluid mechanics. For the second year, students who have passed the first year of the Master's in Modelling and Simulation in Fluid Mechanics and Heat Transfer are automatically accepted. Second-year applicants who hold a different first-year Master's, an engineering degree or a foreign degree and have sufficient training in fluid mechanics and numerical methods are accepted based on their application.

ACQUIRED SKILLS

Ability to understand, analyse and model physical phenomena in solid and fluid mechanics and the associated types of transfer.

Ability to implement numerical methods by developing prototype codes.

Mastery of the leading commercial codes used in this field in industry and research laboratories.

Ability to present findings in writing and orally in French and English.

YOUR FUTURE CAREER

Graduates can work as computational engineers, research and development engineers or consultants in the field of fluid mechanics, heat transfer and energy. The main sectors concerned are energy, the environment, transport (automotive, aeronautics, naval, etc.) and materials processing (metals, glass, plastics, etc.). Graduates of this specialisation can also pursue a PhD. They can then go into teaching and/or research in a university, institute, school or national or international organisation.

BENEFITS OF THE PROGRAM

One of the aims of the Modelling and Simulation in Fluid Mechanics and Heat Transfer programme is to give students high-level scientific skills in modelling and numerical simulation in fluid mechanics and heat transfer, including from a practical point of view. To this end, 30% of the course in the first year and 50% in the second year are based on concrete simulation projects involving the different physical phenomena covered in class. In this way, students are familiarised with every stage of the project, from definition, implementation and validation to presentation of the results.

PROGRAM

SEMESTER 1

TC-1-1 Elasticité (ECTS:6)
TC-1-2 Dynamique des fluides (ECTS:6)
TC-1-3 Outils pour le calcul numérique (ECTS:3)
TC-1-4 Analyse numérique et calcul scientifique (ANCS) (ECTS:6)
- TC-1-4-1 Analyse numérique et calcul scientifique 1 (ANCS1)
- TC-1-4-2 Analyse numérique et calcul scientifique 2 (ANCS2)

TC-1-5 Simulation numérique en mécanique (ECTS:6)
- TC-1-5-1 Simulation numérique en mécanique des solides
- TC-1-5-2 Simulation numérique en mécanique des fluides

TC-1-6 Anglais (ECTS:3)

SEMESTER 2

TC-2-1 Méthodes numériques pour la mécanique (ECTS:6)
- TC-2-1-1 Méthodes numériques pour la mécanique (EF)
- TC-2-1-2 Méthodes numériques pour la mécanique (DF)

TC-2-2 Ondes acoustiques (ECTS:3)
TC-2-3 Transferts de chaleur par conduction (ECTS:3)
Techniques d'expression française et anglaise (ECTS:3)
Stage (ECTS:3)
MFT-2-2 Dynamique des fluides et expériences (ECTS:6)
- MFT-2-2-1 Dynamique des fluides approfondie
- MFT-2-2-2 Activités expérimentales

MFT-2-3 Rayonnement thermique (ECTS:4)
MFT-2-1 Convection thermique, échangeurs (ECTS:5)
MS-2-1 Mécanique des structures (ECTS:6)
MS-2-2 Comportement mécanique des matériaux (ECTS:6)
- MS-2-2-1 Comportement anélastique des matériaux
- MS-2-2-2 Essais mécaniques

MS-2-3 Ondes élastiques (ECTS:3)