

Field of study **Sciences and engineering**

Training available in

Initial training

Continuing education

Recognition of prior learning

### 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 :

M2 work placement of at least 4 months (possibility of starting in March)

### Contacts :

DESCELIERS Christophe (M2)  
Academic coordinator

DAULT Marie-laure (M2)  
Academic secretary  
marie-laure.dault@univ-eiffel.fr  
Phone number : 01 60 95 77 68  
Building : Lavoisier  
Office : 106

SOLTANI Amel  
Gestionnaire VAE  
vae@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](mailto:sio@univ-eiffel.fr) / Tel : +33 1 60 95 76 76



Institut Francilien des Sciences Appliquées (IFSA)

Master's degree M2

### TO GET THERE

M1 or equivalent (60 ECTS credits) in a related field.

### ACQUIRED SKILLS

Mastery of mechanical modelling to address research and development issues; mastery of numerical methods for mechanics (including the use of IT tools); mastery of modern methods of analysis and numerical simulation to study the performance and reliability of mechanical systems composed of simple and complex structures whose dimensions range from a few micrometres (microsystems) to metres (structures in the mechanical industry, transport, civil engineering, etc.).

### YOUR FUTURE CAREER

Graduates go on to work in mechanical engineering research (or research and development) in major national and international organisations and research centres (such as CEA and EDF), university laboratories, companies or service companies (engineering and/or consultancy).

There is a wide range of fields of application: mechanical industries; civil engineering constructions and structures; transport industries (automotive, aeronautical, space, naval, rail); development of industrial products by the transformation of materials (metals, composites, etc.); production and transformation of energy (petrochemicals, gas, electricity); etc.

Related jobs include: project manager; design engineer; R&D engineer. Graduates can pursue further study through a PhD in Mechanics (leading to a career as a CNRS researcher, faculty member - lecturer, university professor).

### BENEFITS OF THE PROGRAM

The second-year Master's in Mechanics, Materials and Structures for Construction and Transport offers high-level training in the mechanics of heterogeneous materials and structures, with varied applications in the fields of civil engineering and transport. It also gives students solid experience in the development of the associated numerical methods (e.g. for multi-scale problems and the simulation of multi-physical problems) and offers personalised training through a choice of options.

More information



# PROGRAM

## SEMESTER 3

Méthodes numériques pour les problèmes multiphysiques (ECTS:2)  
Mécanique de l'endommagement (ECTS:2)  
Vibroacoustique (ECTS:2)  
Méthodes d'homogénéisation des milieux hétérogènes (ECTS:2)  
Modélisation probabiliste et apprentissage automatique (ECTS:2)  
Anglais pour la communication scientifique (ECTS:2)  
Mécanique des matériaux pâteux et aspects thermiques (ECTS:2)  
Propagation du son en milieux poreux (ECTS:2)  
Mécanique des interfaces (ECTS:2)  
Homogénéisation numérique des matériaux hétérogènes (ECTS:2)  
Fiabilité des systèmes mécaniques (ECTS:2)  
Optimisation numérique des structures (ECTS:2)  
Elasticité en grandes déformation (ECTS:6)

## SEMESTER 4

Stage (ECTS:30)