



Major	Mechanical Engineering		
Master's programme	FACTORY OF THE FUTURE		
Master's Code	FOF - ME		
<i>Qualification awarded</i>	Master in mechanical engineering		
<i>Programme director</i>	Dr. Eric MONTEIRO eric.monteiro@ensam.eu		
<i>Mode of study</i>	<i>Level of qualification</i>	<i>Field of study</i>	<i>Language of study</i>
Full time	Master	Engineering ISCED-F-07	English
<i>ECTS</i>	<i>Campus</i>	<i>Length of programme</i>	<i>Specific arrangements for recognition of prior learning</i>
60	Paris	1 year	No
<i>Keywords</i>	Mechanical Engineering, Industrial Engineering		

Admission requirements

Type	Level	Way
French proficiency	Level B2	Certificate
English proficiency	Level B2	Certificate
Previous degree	Bachelor in Engineering, or equivalent	Certificate of achievement

Applicants interested in the FOF - ME programme must follow the online procedure and adhere to the schedule.

<https://artsetmetiers.fr/en/formation/master-admissions>

Overall objectives

The objectives are :

- To provide the students with introductory classes in advanced engineering topics
- To become familiar with the different steps of scientific research
- To acquire scientific knowledge through a practical approach
- To learn to manage projects and develop the foundations of a first research project



Programme learning goals

The table below details the abilities to be acquired and the expected proficiency levels according to the following grading scale:

abilities	Expected abilities	Expected proficiency level
		R&D
<i>Disciplinary knowledge and reasoning</i>	1.1 Knowledge of underlying mathematics and science	4
	1.2 Core fundamental knowledge of engineering	4
	1.3 Advanced engineering fundamental knowledge, methods and tools	4
<i>Personal and professional skills attributes</i>	2.1 Analytical reasoning and problem solving	4
	2.2 Experimentation, investigation and knowledge discovery	4
	2.3 System thinking	3
	2.4 Ethics, though and learning	4
	2.5 Ethics, equity and other responsibilities	4
<i>Interpersonal skills: Teamwork and communication</i>	3.1 Teamwork	4
	3.2 Communications	4
	3.3 Communications in foreign language	3
<i>Conceiving, Designing, implementing, operating, innovating and entrepreneurship in the context of Corporate Social Responsibility</i>	4.1 External, societal and environmental context	3
	4.2 Enterprise and business context	3
	4.3 Conceiving, systems engineering and management	3
	4.4 Designing	4
	4.5 Implementing	3
	4.6 Operating	3
	4.7 Leading engineering endeavours	4
	4.8 Engineering entrepreneurship	3

More specifically, the **key strengths** of the FOF - ME programme are as follows:

Programme structure

Learning outcomes are reached through a well-balanced training programme that combines theoretical and practical learning sequences in order to develop multiple transversal skills

The FOF programme is a one-year Master programme that spreads on two semesters

- First year (Master 1)

Code	Title	Sem.	Year	ECTS	Hours	Compulsory/Optional	Teaching modalities
MATH	Mathematics	S1	M1	3	30	Compulsory	



Code	Title	Sem.	Year	ECTS	Hours	Compulsory/ Optional	Teaching modalities
NUMS	Numerical Methods	S1	M1	3	30	Compulsory	
DPST	Data processing	S1	M1	3	24	Compulsory	
BIBT	Bibliography Technics	S1	M1	1	12	Compulsory	
SENG	Scientific communication in English	S1	M1	1	12	Compulsory	
FLE1	Foreign Language	S1	M1	4	60	Compulsory	
PMNG	Project Management	S1	M1	1	12	Compulsory	
CDEV	Career Development	S1	M1	1	6	Compulsory	
SMCH	Solid Mechanics	S1	M1	3	30	Optional	
FMCH	Fluid Mechanics	S1	M1	3	30	Optional	
THSC	Thermal Science	S1	M1	2	18	Optional	
MAT1	Material Science	S1	M1	2	12	Optional	
THDY	Thermodynamics	S1	M1	2	12	Optional	
CAD1	Computer-Aided Design	S1	M1	1	12	Optional	
SCP1	Scientific Computing Project	S1	M1	3	60	Optional	
IFEA	Introduction to Finite Element Analysis	S1	M1	2	18	Optional	
BMCH	Introduction to Biomechanics	S1	M1	2	18	Optional	
PDMS	Product Design Methods	S1	M1	2	18	Optional	
FHYD	Fundamental of hydraulics	S1	M1	2	18	Optional	
FLE2	Advanced Foreign Language	S2	M1	3	32	Compulsory	
OMNG	Operation Management	S2	M1	2	12	Compulsory	
VIBA	Vibrations Analysis	S2	M1	2	18	Compulsory	
RPJT	Research Project	S2	M1	4	120	Compulsory	
CAD2	Advanced Computer-Aided Design	S2	M1	2	18	Optional	
MAT2	Advanced Material Science	S2	M1	2	18	Optional	



Code	Title	Sem.	Year	ECTS	Hours	Compulsory/Optional	Teaching modalities
AERO	Fundamentals of Aerodynamics	S2	M1	2	18	Optional	
ANAP	Anatomy and Physiology	S2	M1	2	18	Optional	
MENG	Manufacturing Engineering	S2	M1	2	24	Optional	
MSD1	Mechanical Sizing and Design	S2	M1	2	24	Optional	
MFLD	Experimental and numerical methods for fluids	S2	M1	2	24	Optional	
INT1	Internship	S2	M1	15	455	Compulsory	

Table 1 : Detail of the modules of the FOF - ME programme over the two semesters.

Study and assessment rules

Each module can be evaluated by means of practical works, projects, reports, oral presentations, exams and the assessment rules are explained at the beginning of the programme. Each module is evaluated between 0 and 20.

Each module can be evaluated by means of practical works, projects, reports, oral presentations, exams and the assessment rules are explained at the beginning of the programme. The control of knowledge and the evaluation of acquired skills are done by traditional examinations and continuous control

- Notes acquired in continuous review are not subject to a second session. The precise control rules are validated each year by the steering committee
- An exam session is organized at the end of the first semester. A catch-up session is organized 15 days after the last examination of the initial exam session

Each teaching unit is marked from 0 to 20 and the validation procedures of the TUs are those in force in the ENSAM Pedagogic Rules.

- The control procedures are specified by each TU manager. For lessons in the form of lectures, the test may include one or two written exams, at the discretion of the TU managers
- Training and projects are evaluated through a report and/or a defense.

Retake exams are organized at the end of each semester

Retake exams are organized at the beginning of the second semester.

Graduation requirements

To be graduated, students need to comply with the following rules:

Each teaching unit score must be higher than (or equal to) 7

- Each module score must be higher than (or equal to) 10

Careers of graduates and access to further studies

Depending on their results and professional expectations, graduate students can continue their professional careers as a:

- Student must obtain, at least, 60 ECTS to be allowed to continue in second year (M2)