



MATERIALS FOR THE FUTURE DESIGN AND ENGINEERING

2nd year of Master degree - Fall semester

All students may follow **core courses**. In addition to these courses, **all students must choose only one option out of five**, each one consisting of **fundamental** and **complementary courses**:

- Sustainable Processes and Materials
- Innovative metal materials
- Design and Innovation of Materials
- Soft Matter Formulation
- Sustainable Energy and Materials

The exchange offer **corresponds to** the first half of the academic year, **fall semester (from September to January)**.

A minimum of **20 ECTS** (European Credit Transfer and Accumulation System) are **required** for the **learning agreement**.

All courses are taught **in English**.

Please note that **courses** are **place-limited**.

For information on the **requirements of each course**, please check the **syllabus** on our [website](#).

Courses take place at **various campuses**, all located near the **Panthéon** and the **Luxembourg Garden**:

- **Chimie ParisTech-PSL**, located at: **11 Rue Pierre et Marie Curie, 75005 Paris**
- **Mines Paris-PSL**, located at: **60 boulevard Saint-Michel, 75006 Paris**
- **ESPCI Paris-PSL**, located at: **10 rue Vauquelin, 75005 Paris**

CORE COURSES

Due to their **simultaneous programming**, “**Managing the unknown**” and “**PSL Week**” are **not compatible**, please take this into account to avoid planning difficulties.

All courses are eligible for selection. From 1 onwards, with the possibility of attending all 3 courses.

Only **one** course **per sub-section** can be selected.

- MAD.CHO- **Selection and design of materials for a sustainable city** (4 ECTS)

- MHXRFLE / MHXRANG - **Language:** FLE- French as Foreign Language or English (2 ECTS)

- MHMADPSL - **PSL WEEK** (2 ECTS)

- MAD.INNOV- **Managing the unknown** (3 ECTS)

or

- MAD.THINK- **Design Thinking** (3 ECTS)

- MAD.IND - **Industrial project** (3 ECTS)

or

- MAD.DES - **Design Project** (3 ECTS)

OPTION: SUSTAINABLE PROCESSES AND MATERIALS

All courses are eligible for selection. From 1 onwards, with the possibility of attending both.

All courses are eligible for selection. Please carefully **check the timetable** to avoid planning difficulties.

- MAD.MAT- **Materials and Environment** (4 ECTS)

- MAD-ECO- **From ecodesign to recycling** (4 ECTS)

- MAD-QUOT- **Materials of everyday life : scientific challenges** (4 ECTS)

- MAD-AGE- **Endurance and durability of metal materials** (4 ECTS)

- MAD-BIO-**Bioresources valorization** (4 ECTS)

- MAD-COAT- **Processes and coatings** (4 ECTS)

- MADPAT- **Materials of the cultural heritage and durability** 4 ECTS)

OPTION: INNOVATIVE METAL MATERIALS

All courses are eligible for selection. From 1 onwards, with the possibility of attending both.

All courses are eligible for selection. Please carefully **check the timetable** to avoid planning difficulties.

- MAD-AGE- **Endurance and durability of metal materials** (4 ECTS)
- MAD.PHYS- **Physical metallurgy** (4 ECTS)

- MAD-ECO- **From ecodesign to recycling** (4 ECTS)
- MAD-COAT- **Processes and coatings** (4 ECTS)
- MAD-MECA- **From mechanical tests to constitutive laws** (4 ECTS)

OPTION: DESIGN AND INNOVATION OF MATERIALS

All courses are eligible for selection. From 1 onwards, with the possibility of attending both.

All courses are eligible for selection. Please carefully **check the timetable** to avoid planning difficulties.

- MAD-ECO- **From ecodesign to recycling** (4 ECTS)
- MAD-QUOT- **Materials of everyday life : scientific challenges** (4 ECTS)

- MAD.MAT- **Materials and Environment** (4 ECTS)
- MAD-FORM- **Physicochemistry and formulation of colloidal dispersions** (4 ECTS)
- MAD-COAT- **Processes and coatings** (4 ECTS)

OPTION: SOFT MATTER FORMULATION

All courses are eligible for selection. From 1 onwards, with the possibility of attending both.

All courses are eligible for selection. Please carefully **check the timetable** to avoid planning difficulties.

- MAD-FORM- **Physicochemistry and formulation of colloidal dispersions** (4 ECTS)
- MAD.PROS- **Formulation and processing of soft matter** (4 ECTS)

- MAD.MAT- **Materials and Environment** (4 ECTS)
- MAD-QUOT- **Materials of everyday life : scientific challenges** (4 ECTS)
- MAD-COAT- **Processes and coatings** (4 ECTS)

OPTION: SUSTAINABLE ENERGY AND MATERIALS

Course eligible for selection.

All courses are eligible for selection. Please carefully **check the timetable** to avoid planning difficulties.

- TECHREN 1 and 2 - **Sustainable Energy and Materials** (8 ECTS)

- MAD.MAT- **Materials and Environment** (4 ECTS)
- MAD-ECO- **From ecodesign to recycling** (4 ECTS)
- MAD-QUOT- **Materials for everyday life : scientific challenges** (4 ECTS)
- MAD-BIO- **Bioresources valorization** (4 ECTS)
- MAD-COAT- **Processes and coatings** (4 ECTS)
- MADPAT- **Materials of the cultural heritage and durability** (4 ECTS)

TIMETABLE

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
AM	*	MAD-BIO MAD-COAT	MAD-FORM MAD-AGE TECHREN1	MAD-CHO	MAD-MECA
PM	MAD-THINK	MAD-PAT MAD-QUOT	MAD-PHYS TECHREN2	MAD-ECO MAD-PROS	MAD-MAT MAD-MECA