UPEC
UNIVERSITÉ PARIS-EST CRÉTEIL

FACULTÉ DES SCIENCES
ET TECHNOLOGIE

Master's degree in Chemistry
Molecular physical chemistry and applications

Master's degree year 1 - semester 1

Electrochemistry (3 ECTS)
Synthesis strategies in fine chemistry 1 (3 ECTS)
Spectroscopic and analytical methods (3 ECTS)
Techniques of chromatography (3 ECTS)
Options (12 ECTS), choose between:
* From macromolecules to polymer materials (3 ECTS)
* Biotechnology and fine chemistry (3 ECTS)
* Biotechnology of recombining proteins (3 ECTS)
* Nanochemistry (3 ECTS)
* Quantum physics and chemistry 1 (3 ECTS)
* Modelling in chemical sciences (3 ECTS)
* Environmental chemistry (3 ECTS)
* Programming 1 (3 ECTS)
Company knowledge base (3 ECTS)
English (3 ECTS)

Master's degree year 1 - semester 2

NMR Analytical methods and introduction to MRI (3 ECTS)
Bio-sourced polymers (3 ECTS)
Micelles, emulsions, foams and dispersions (3 ECTS)
Projects (3 ECTS)
English (3 ECTS)
Surface analysis methods (3 ECTS)
Options (12 ECTS), choose between:
* Cellular basis of pharmacology and toxicology (6 ECTS)
* Chromatography methods in microsystems for chemical and biological analysis (3 ECTS)
* Chemistry of surfaces and bio-arrays (3 ECTS)
* Programming 2 (3 ECTS)
* Applications of spectroscopy (3 ECTS)
* Modelling of complex media (3 ECTS)
* Quantum physics and chemistry 2 (3 ECTS)
* Synthesis strategies in fine chemistry 2 (3 ECTS)
* Polymer solutions and gels (3 ECTS)

Master's degree year 2 - semester 1

Spectroscopy andmethods of characterization (6 ECTS)
Multi-scale modelling (6 ECTS)
Reactivity and Chemicalkinetics (3 ECTS)
Physical Chemistry of Natural diluted media (3 ECTS)
Advanced analytical chemistry (3 ECTS)
Advanced Experimental Physical Chemistry (3 ECTS)
Projects and management (3 ECTS)

Communication and data base (3 ECTS)

Master's degree year 2 - semester 2

Internship (24 ECTS)

Option (6 ECTS), choose between:

* Theorical chemistry (research) (6 ECTS)
* Waste management and regulation (professional) (6 ECTS)