UPEC
UNIVERSITÉ PARIS-EST CRÉTEIL

FACULTÉ DES SCIENCES
ET TECHNOLOGIE

Bachelor's degree in Earth and life science
Chemistry and biology

Bachelor's degree year 1 - semester 1

Tools for mathematics and physics 1 (6 ECTS), including:
** Tools for mathematics (2 ECTS)
** Tools for physics (4 ECTS)
Atoms and molecules (6 ECTS)
Animal and plant biology (6 ECTS), including:
** Animal biology (3 ECTS)
** Plant biology (3 ECTS)
Origin, structure and funtion of Earth systems (3 ECTS), including:
** Origin of the Universe, solar system, and Earth (1.5 ECTS)
** Structure and funtion of Earth systems (1.5 ECTS)
Algorithm and computer software: initiation (3 ECTS)
Language techniques (3 ECTS)
English (3 ECTS)

Bachelor's degree year 1 - semester 2

Chemical reactivity (6 ECTS)
Tools for mathematics and physics 2 (6 ECTS), including:
** Tools for mathematics (3 ECTS)
** Tools for physics (3 ECTS)
Cellular biology 1 (3 ECTS)
Structural biology (6 ECTS)
Language techniques and professional project (3 ECTS)
Transdisciplinary option (3 ECTS)
English (3 ECTS)

Bachelor's degree year 2 - semester 1

Organic chemistry 1 : functions and reactions (6 ECTS)
Fluid chemistry (6 ECTS)
Molecular biology and applications (6 ECTS), including:
** Molecular biology (4 ECTS)
** Applications in biology (2 ECTS)
Energetic metabolism and enzymology(6 ECTS), including:
** Energetic metabolism (3 ECTS)
** Enzymology (3 ECTS)
Transdisciplinary option (3 ECTS)
English (3 ECTS)
Preparation to veterinary and agronomy schools entrance exams

Bachelor's degree year 2 - semester 2

Separation and spectral analysis (6 ECTS), including:
** Spectral analysis techniques (ECU - 3 ECTS)
** Chromatography (ECU - 3 ECTS)

Organic chemistry mechanisms and theory (3 ECTS)
Molecular biology 2 (3 ECTS)
Cell and gene technologies (3 ECTS)
Metabolic regulation (3 ECTS)
Physical science (3 ECTS)
Statistical tools (3 ECTS)
Microbiology 1 (3 ECTS)
English (3 ECTS)
Preparation to veterinary and agronomy schools entrance exams

Bachelor's degree year 3 - semester 1

Molecular biology (6 ECTS)
Chemical and biochemical energetics (6 ECTS)
Physiology: introduction (3 ECTS)
Chemical dynamics and catalysis (6 ECTS), including:
** Kinetics (4 ECTS)
** Catalysis (2 ECTS)
Macromolecular chemistry (3 ECTS)
Professional culture and integration (3 ECTS)
English (3 ECTS)

Bachelor's degree year 3 - semester 2

Plant biotechnology (3 ECTS)
Statistics and chemometrics (3 ECTS)
Microbiology 2 (3 ECTS)
Internship (6 ECTS)
Organic synthesis (3 ECTS)
Practical work (3 ECTS)
Option (3 ECTS), choose between:
* Bioactive molecules crystallography (3 ECTS)
* Industrial chemistry (3 ECTS)
* Organometallic synthesis (3 ECTS)
* Proteomics and pharmacology (3 ECTS)
Professional culture (3 ECTS)
English (3 ECTS)