

Bachelor in Branch: Chemistry

Speciality: Fundamental Chemistry

Brief

The license in fundamental chemistry is an academic type training. This license is designed as a set of educational units whose purpose is to give the students concerned a solid training in organic chemistry, analytical chemistry, quantum chemistry, as well as physical chemistry (thermodynamics of solutions, surface chemistry and catalysis and electrochemistry) and crystallography.

| Field | Branch | Speciality |
|-------------------------------------|------------------|----------------------------------|
| SCIENCE OF THE MATER | Chemistry | Fundamental Chemistry |

First Semester

| Teaching Unit | Matter | Credit | Coefficient | Course | TD | TP | HV |
|----------------------------|---|--------|-------------|--------|------|------|-------|
| Fundamental Unit | Mathematics 1/ Analysis and Algebra 1 | 3 | 6 | 3h00 | 1h30 | | 67h30 |
| | Physics 1/ Mechanics of the point | 3 | 6 | 3h00 | 1h30 | | 67h30 |
| | Chemistry 1/ Structure of matter | 3 | 6 | 3h00 | 1h30 | | 67h30 |
| Methodological Unit | TP Mechanical | 1 | 2 | | | 1h30 | 22h30 |
| | Computer science 1 | 1 | 2 | | | 1h30 | 22h30 |
| Discovery unit | Environment, Biotechnologie, Simple physical systems, etc . | 1 | 2 | 1h30 | | | 22h30 |
| Transversale Unit | Languages 1 | 1 | 2 | 1h30 | | | 22h30 |

Second Semester 2

| Teaching unit | Matter | Credit | Coefficient | Course | TD | TP | HV |
|----------------------------|---|--------|-------------|--------|------|------|-------|
| Fundamental Unit | Mathematics 2/ Analysis and Algebra 2 | 3 | 6 | 3h00 | 1h30 | | 67h30 |
| | Physics 2/ electricity | 3 | 6 | 3h00 | 1h30 | | 67h30 |
| | Chemistry 2/ Thermodynamics and Chemical Kinetics | 3 | 6 | 3h00 | 1h30 | | 67h30 |
| Methodological unit | TP electricity | 1 | 2 | | | 1h30 | 22h30 |
| | TP Chemistry 2 | 1 | 2 | | | 1h30 | 22h30 |
| | Computer science 2/ Language of programming | 2 | 4 | 1h30 | | 1h30 | 45h00 |
| Discovery unit | History of Science , Business Economics, Chemistry apps, Renewable Energies etc . | 1 | 2 | 1h30 | | | 22h30 |
| Transversale Unit | Languages 2 | 1 | 2 | 1h30 | | | 22h30 |

Third Semester

| Teaching unit | Matter | Credit | Coefficient | Course | TD | TP | HV |
|----------------------------|--|--------|-------------|--------|------|------|-------|
| Fundamental Unit | Mineral Chemistry | 3 | 6 | 3h00 | 1h30 | | 67h30 |
| | Organic Chemistry 1 | 3 | 6 | 3h00 | 1h30 | | 67h30 |
| | Applied mathematics | 2 | 4 | 1h30 | 1h30 | | 45h00 |
| | Vibrations, Waves and Optics | 2 | 4 | 1h30 | 1h30 | | 45h00 |
| Methodological unit | TP Mineral Chemistry | 1 | 2 | | | 1h30 | 22h30 |
| | TP Organic Chemistry | 1 | 2 | | | 1h30 | 22h30 |
| | Numerical Methods and Programming | 2 | 3 | 1h30 | | 1h30 | 45h00 |
| Discovery unit | Physico-Chemical Analysis Techniques I | 2 | 2 | 1h30 | 1h30 | | 45h00 |
| Transversale Unit | languages 3 | 1 | 1 | 1h00 | | | 15h00 |

Fourth semester

| Teaching unit | Matter | Credit | Coefficient | Course | TD | TP | HV |
|----------------------------|---|--------|-------------|--------|------|------|-------|
| Fundamental Unit | Organic Chemistry 2 | 3 | 6 | 3h00 | 1h30 | | 67h30 |
| | Thermodynamics and Chemical Kinetics | 3 | 6 | 3h00 | 1h30 | | 67h30 |
| | Analytical Chemistry | 2 | 4 | 1h30 | 1h30 | | 45h00 |
| | Quantum Chemistry | 2 | 4 | 1h30 | 1h30 | | 45h00 |
| Methodological unit | TP Analytical Chemistry | 1 | 2 | | | 1h30 | 22h30 |
| | TP Thermodynamics and Chemical Kinetics | 2 | 3 | 1h30 | | 1h30 | 45h00 |
| | Inorganic Chemistry | 2 | 3 | 1h30 | | 1h30 | 45h00 |
| Discovery unit | Physico-Chemical Analysis Techniques II | 2 | 2 | 1h30 | 1h30 | | 45h00 |
| Transversale Unit | languages 4 | 1 | 1 | 1h00 | | | 15h00 |

Fifth semester

| Teaching unit | Matter | Credit | Coefficient | Course | TD | TP | HV |
|----------------------------|-------------------------|--------|-------------|--------|------|------|-------|
| Fundamental Unit | Organic Chemistry 3 | 3 | 5 | 3h00 | 1h30 | | 67h30 |
| | Analytical Chemistry 2 | 3 | 5 | 3h00 | 1h30 | | 67h30 |
| | Crystallography | 3 | 5 | 3h00 | 1h30 | | 45h00 |
| | Quantum Chemistry 2 | 3 | 5 | 3h00 | 1h30 | | 45h00 |
| Methodological unit | TP Analytical Chemistry | 2 | 3 | | | 1h30 | 22h30 |
| | TP Molecular modeling | 2 | 3 | | | 1h30 | 22h30 |
| Discovery unit | Environmental Chemistry | 1 | 2 | 1h30 | | | 22h30 |
| Transversale Unit | Scientific English I | 1 | 2 | 1h30 | | | 22h30 |

SixSemester

| Teaching unit | Matter | Credit | Coefficient | Course | TD | TP | HV |
|----------------------------|---|--------|-------------|--------|------|------|-------|
| Fundamental Unit | Thermodynamics of solutions | 3 | 5 | 3h00 | 1h30 | | 67h30 |
| | Electrochemistry | 3 | 5 | 3h00 | 1h30 | | 67h30 |
| | Molecular spectroscopy | 3 | 5 | 3h00 | 1h30 | | 45h00 |
| | Surface chemistry and catalysis | 3 | 5 | 3h00 | 1h30 | | 45h00 |
| Methodological unit | TP Electrochemistry | 2 | 3 | | | 1h30 | 22h30 |
| | TP Physico-chemical methods of analyzes | 2 | 3 | | | 1h30 | 22h30 |
| Discovery unit | Ethics and deontology | 1 | 2 | 1h30 | | | 22h30 |
| Transversale Unit | Scientific English II | 1 | 2 | 1h30 | | | 22h30 |