

Name	Mineral chemistry
ECTS credits	3
Year / Semester	<i>I/1°</i>
Specific learning outcomes	<i>On successful completion of this module students should be able to: Acquire the basics of inorganic chemistry and become familiar with minerals</i>
Contents	<p>I. CRISTALLOGRAFIE 1. <i>Notions of crystallography: mesh, crystal lattice and lattice plane</i> 2. <i>Notions of radiocristallography</i> 3. <i>Ionic solids Energy in ionic solids</i> 4. <i>Covalent solids</i> 5. <i>Metallic solids</i></p> <p>II. Phase diagrams</p> <p>III. Periodic table III.1. <i>Evolution of the intrinsic properties of the chemical elements of the periodic table</i> 1. <i>Hydrogen</i> 2. <i>The noble gases</i> 3. <i>Alkaline and alkaline earth:</i> 4. <i>Columns 13 and 14</i> 4.1 <i>Boron</i> 4.2 <i>Aluminium</i> 4.3 <i>Carbon</i> 4.4 <i>Silicon</i> 5. <i>Nitrogen and phosphorus</i> 5.1 <i>Elements and allomorphy</i> 5.2 <i>Hydrides</i> 5.3 <i>Oxides and oxides</i> 5.4 <i>Nitrogen and phosphorus in life and industry</i> 6. <i>Chalcogenes: column 16</i> 6.1 <i>Oxygen element: O₂ and O₃</i> 6.2 <i>Oxides</i> 6.3 <i>Water and hydrogen peroxide</i> 6.4 <i>Sulfur and its compounds</i> 7. <i>Halogens</i> 7.1 <i>The elements and their properties</i> 7.2 <i>Dihalogenes</i> 7.3 <i>Hydrogen halides, HX</i> 7.4 <i>Halogen / oxygen compounds</i> 7.5 <i>Halogens in life and industry</i> 8. <i>Transition metals</i> 8.1 <i>Transition Metal Chemistry - Coordination Complexes</i> 8.2 <i>The ligands</i> 8.3 <i>Elements of nomenclature</i> 8.4 <i>Properties of transition metal complexes</i> 8.5 <i>Reactions of transition metal complexes</i> 8.6 <i>Transition metals, industry and life</i></p>
Teaching and learning	<i>Face to face, 45 hours</i>

methods	
Teaching techniques	<i>Practical classes, 45 hours</i>
Assessment methods	<p><i>Written.</i></p> <p><i>A first-term written test and a second-term written test are not foreseen.</i></p> <p><i>The first-term written test will be devoted to the assessment of the level of achievement of LOs I and II</i></p> <p><i>The second term written test will be devoted to the assessment of the level of achievement of LOs III.</i></p>
Assessment criteria	<p>On successful completion of the course students will be able to:</p> <ol style="list-style-type: none"> 1. To develop an understanding of the range and chemistry of elements in the periodic table and their compounds 2. To establish an appreciation of the role of inorganic chemistry in the chemical sciences 3. To develop an understanding of the role of the chemist in measurement and problem solving in inorganic chemistry 4. To provide an understanding of chemical methods employed for problem solving involving inorganic systems.
Assessment metrics	<i>Attribution of a final grade</i>
Criteria of attribution of the final grade	<p><i>The grade goes from 1 (minimum) up to 20 (maximum). The minimum threshold to pass is 7. To pass the exam students should obtain the minimum evaluation in all the assessments.</i></p> <p><i>The final grade will be determined according to the following rules:</i></p> <ul style="list-style-type: none"> - <i>Written exam: 50%</i> - <i>term written test: 20%</i> - <i>Practical classes : 30%</i>
Preparatory course units	<i>N.A.</i>
Didactic material	<ul style="list-style-type: none"> • <i>- Cours de chimie minérale, M BERNARD, ED DUNOD. 2005</i> • <i>Chimie des minéraux et oligoéléments en lithothérapie, RBoschiero, ED DANGLES. 2012</i> • <i>Précis De Chimie Industrielle: Chimie Minérale, ED PAYEN 2012</i>