

4.0 credits	32.5 h + 7.5 h	2q
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Teacher(s) :	Devaux Jacques ; Fiset Paul ; Nysten Bernard (coordinator) ;
Language :	Français
Place of the course	Louvain-la-Neuve
Main themes :	<p>The course is divided into 2 parts.</p> <p>The first part defines the concepts and tools of basic science of materials and processes and highlights the major steps leading from raw materials to finished material, a particular focus on the relationship between synthesis processes, structure and properties of materials Results.</p> <p>The second part provides training on static, an introduction to the strength of materials and introduced the study of the most common, such as those encountered in automobiles.</p>
Aims :	<p>The course aims to give students the technological base in the fields of materials and processes of chemical industry and mechanical and current mechanisms to enable it to understand the specific language of science and collaborate and interact with specialists in these fields. The course also aims to make possible the implementation of a project in control.</p> <p><i>The contribution of this Teaching Unit to the development and command of the skills and learning outcomes of the programme(s) can be accessed at the end of this sheet, in the section entitled "Programmes/courses offering this Teaching Unit".</i></p>
Content :	<p>Part processes and materials</p> <ul style="list-style-type: none"> - Industrial production and sources of chemical raw materials. - Study of chemical processes in the types of metals and inorganic materials, detergents and polymers: examples will be taken in order to highlight the tools developed chemical processes, recent trends and to illustrate the concepts of balance sheets of material and heat as well as the problem of pollution. - Large classes of materials (metals, ceramics, polymers) - forces of inter atomic - arrangement of atoms (amorphous state / lens) - structures and defects - resulting properties - properties and synergy alloys / composites - Mechanical properties of materials: stress - strain (elasticity and viscoelasticity), modulus of elasticity <p>Mechanical and mechanism</p> <ul style="list-style-type: none"> - Reminders of mechanical sound - Static balance vector equations of equilibrium and applications - Elements of Strength of materials: internal efforts, tension and strain and application sizing beams - A study of current mechanisms - Conferences on topics Miscellaneous: - Robotics - mechanical vibrations - vehicle dynamics, multibody systems - the study of human walking - dynamics of the aircraft
Other infos :	The courses in physics and chemistry taught in BAC1 and BAC2 or equivalent courses. written exam
Cycle and year of study :	<ul style="list-style-type: none"> > Bachelor in Business Engineering > Bachelor in Information and Communication > Bachelor in Philosophy > Bachelor in Pharmacy > Bachelor in Psychology and Education: General > Bachelor in Economics and Management > Bachelor in Motor skills : General > Bachelor in Human and Social Sciences > Bachelor in Sociology and Anthropology > Bachelor in Political Sciences: General > Bachelor in History of Art and Archaeology : General > Bachelor in Mathematics > Bachelor in History > Bachelor in Biomedicine > Bachelor in Religious Studies

Faculty or entity in charge:	ESPO
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