

4.0 credits	30.0 h + 22.5 h	2q
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Teacher(s) :	Nauts André ; Goosse Hugues ;
Language :	Français
Place of the course	Louvain-la-Neuve
Main themes :	<p>Thermodynamic state of a closed system, notions of pressure and temperature. Macroscopic properties of perfect gases. Internal energy and first principle of thermodynamics ; applications to perfect gases. Entropy and second principle of thermodynamics, applications (including to thermal machines). Microscopic formulas of entropy (of Boltzmann). Thermodynamic functions and thermodynamic potential. Corresponding microscopic formulas. Equilibrium conditions. Real gas and phase change of pure bodies. Formalism of equilibrium : micro-canonic and canonic distribution.</p>
Aims :	<p>To allow the student to acquire a good knowledge of the main ideas of thermodynamics and to be able to apply these ideas to problems or practical applications.</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>
Other infos :	<p>Prerequisite : Mathematical analysis and general physics of BAC1.</p> <p>Reference books: Bertin, M., J.P. Faroux et J. Renault, Thermodynamique, Cours de physique, Classes préparatoires, 1er cycle universitaire, Dunod Université, 1982, 344 pp. Coulon C., Le Boiteux S., Segonds P., Thermodynamique, Cours de Physique, (DEUG-Sciences) Dunod, Paris, 1997, 272 p.</p>
Cycle and year of study :	<p>> Bachelor in Physics > Bachelor in Geography : General > Bachelor in Economics and Management > Bachelor in Mathematics > Bachelor in Engineering</p>
Faculty or entity in charge:	PHYS