

5.0 credits	30.0 h + 30.0 h	1q
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Teacher(s) :	Bartosiewicz Yann ;
Language :	Français
Place of the course	Louvain-la-Neuve
Main themes :	Vapour power plants Gas turbines Combined cycles Cogeneration Refrigerating plant
Aims :	Specialised training in thermal cycles, with the view to provide students knowledge and skills required for the conception of thermodynamics systems, as well as the quantitative evaluation and critic of these <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>
Content :	Characterization of energetic performances of cyclic heat power plants. Exergy concept and its application to cyclic transformations. Exergetic approach of combustion. Energetic and exergetic analysis of vapour power plant. Energetic and exergetic analysis of gas turbine plant. Energetic and exergetic analysis of combined cycles. Cogeneration : energetic and exergetic approach. Energetic and exergetic analysis of simple refrigeration plant.
Other infos :	Prerequisite courses : MECA 2855, Thermodynamics and energetics. Assessment : Open-book exam and discussion about the personal work. Texts : - R.W.Haywood, Analysis of engineering cycles, Pergamon press, 1991. - J.H.Horlock, Combined power plants, Pergamon press, 1992. - M.J. Moran, H.N. Shapiro : Fundamentals of Engineering Thermodynamics, John Wiley, 1995. - J.H. Horlock, Advanced gas turbine cycles, Pergamon (Elsevier Science), 2003. Courses : Oral presentation using PowerPoint slides Tutorials involve a personal work implying an initiation to cycle calculation (using usual programs) as well as two or three visits of power plants of different types.
Cycle and year of study :	> Master [120] in Mechanical Engineering > Master [120] in Electro-mechanical Engineering
Faculty or entity in charge:	MECA