

4.0 credits	30.0 h	1q
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Teacher(s) :	Gerin Patrick (coordinator) ; Draye Xavier ; Jeanmart Hervé ; De Herde André ;
Language :	Français
Place of the course	Louvain-la-Neuve
Main themes :	The course aims at providing the students with a broad, diversified and multidisciplinary background on renewable energy. It gives a global view of the various renewable energy sources and uses, with emphasis on the available resources, conversion technologies, environmental impacts, and socio-economical aspects of their development.
Aims :	<p>Knowledge:</p> <ul style="list-style-type: none"> - Introduction to the various sources of renewable energy - Knowledge of the theoretical background on which are based the main technologies for the conversion and valorisation of renewable energy sources. <p>Know-how and skills:</p> <ul style="list-style-type: none"> - Capacity to seek, understand, analyse, synthesise and assess quantitatively scientific and technical data relative to one renewable energy conversion technology. - Capacity to write a short structured and critical report synthesising the state of the art in the selected subject of renewable energy; capacity to communicate orally this review. <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>The course is based on lectures given by researchers or industrial actors involved in specific aspects of the renewable energy sector. The course content will focus on:</p> <p>Renewable energy: world energy context, global view</p> <p>Solar, hydraulic, wind energies: background, climatic architecture, thermal and photovoltaic conversion of solar energy, wind and hydraulic energies.</p> <p>Energy from biomass: background, photosynthesis, energy crops, thermochemical and biological conversions, biofuels, life cycle assessment.</p> <p>Green certificates: tools to support renewable electricity production</p> <p>The evaluation will be based on a personal critical review of bibliographic data, to be presented orally and in a written report.</p>
Other infos :	<p>Precursory courses Some introduction to thermodynamics</p> <p>Evaluation Oral presentation and written report on the subject selected by the student</p> <p>Teaching team Professors, researchers and industrial actors involved in specific aspects of the renewable energy sector</p>
Cycle and year of study :	<p>> Master [120] in Chemical and Materials Engineering</p> <p>> Master [120] in Mechanical Engineering</p> <p>> Master [60] in Environmental Science and Management</p> <p>> Master [120] in Environmental Science and Management</p>
Faculty or entity in charge:	ENVI