

4.0 credits	30.0 h + 15.0 h	2q
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Teacher(s) :	Labrique Francis (coordinator) ; Matagne Ernest ;
Language :	Français
Place of the course	Louvain-la-Neuve
Main themes :	Study of the sources of electrical energy based on photovoltaic conversion, eolian generation , magneto-caloric conversion and magneto-hydrodynamic conversion (MHD)
Aims :	Study of the sources of electrical energy based on photovoltaic conversion, eolian generation , magneto-caloric conversion and magneto-hydrodynamic conversion (MHD) <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 :	<p>Photovoltaic generation presizing of an stand alone installation, charaterisation of solar modules, use and modelisation of photovoltaic arrays, modelling of solar radiation, ancillary issues (batteries, power electronic converters), connection to the grid</p> <p>Eolian generation reminder on the behaviour of wind turbines, type of electrical generators, connection to the grid, energy storage</p> <p>Thermo-electric conversion thermoelectric effect, effenciency of a couple, merit factor, conditioning of the energy generated</p> <p>Magneto-caloric conversion magneto caloric phenomena, modelling, possible uses for electric energy generation</p> <p>MHD ionisation of gases, conductivity of plasmas, liquids and emulsions , hall effect, general and simplified equations</p>
Other infos :	<p>Prerequisites : Only a basic knowledge of the physic of electricity is required.</p> <p>Assessment : The evaluation is individual and oral during the session, on the basis of reports issued by the students during the year (in groups).</p>
Cycle and year of study :	<p>> Master [120] in Electrical Engineering</p> <p>> Master [120] in Electro-mechanical Engineering</p>
Faculty or entity in charge:	ELEC