


5.00 credits

30.0 h

Q2

Teacher(s)	Willems Bert ;
Language :	English
Place of the course	Louvain-la-Neuve
Prerequisites	Courses in sustainability, environmental transition, macroeconomics, statistical analyses. Advanced courses in energy system analysis and energy economics, energy market analysis and regulation.
Main themes	<p>Some of the topics treated in the course include:</p> <ul style="list-style-type: none"> • Future demand effects; energy efficiency, electrical vehicles, infrastructure investments • Geopolitical analysis of energy sources and systems • Industrial structure and locational analysis • Technology and infrastructure development • Global, regional and national energy models for forecasting (CLIMATIC, PRIME, JEDI, et al.) • Forecasts of climate impact of energy system choices
Learning outcomes	<p>At the end of this learning unit, the student is able to :</p> <p>The course takes a wholistic perspective on the energy in the society, economically, socially and environmentally. Looking at the energy policy objectives in terms of security of supply, environmental sustainability and economic affordability, the course critically examines the historic and current energy value chain. The course includes two additional perspectives: a geopolitical analysis of energy sources and technologies, and a supply chain perspective on industrial structure and locational development.</p> <p>After the course, the students should be familiar with and able to :</p> <ul style="list-style-type: none"> • to run and interpret energy sector models for forecasting in terms of economic, social and environmental KPIs.. • to understand the interplay of geopolitics, market development and energy system development in Europe and internationally. • to model energy system impacts of existing and new technological innovations in consumption, storage and mobility. <p>The course provides a strategic perspective of energy system management, across various vertical segments in the energy value chain.</p>
Evaluation methods	Written exam after the end of the course (70%). Group works, and student presentations are part of the final grade (30%). A resit is only organized for the written exam, the grade for the group work and student presentations is final.
Teaching methods	Ex-cathedra lectures, lectures with active student participation (such as group work, computer simulations, and student presentations), and guest lectures if possible.
Content	<p>Some of the topics treated in the course include:</p> <ul style="list-style-type: none"> • Future demand effects; energy efficiency, electrical vehicles, infrastructure investments • Geopolitical analysis of energy sources and systems • Industrial structure and locational analysis • Technology and infrastructure development • Global, regional and national energy models for forecasting (CLIMATIC, PRIMES, JEDI, et al.) • Forecasts of climate impact of energy system choices <p>Note: The content of the course might be adjusted based on the availability of guest speakers.</p>
Other infos	The communication between the professor and the students takes place through the electronic platform Moodle. You should enroll in the course on Moodle to have access to the online documents such as course notes, slides and additional material that will be posted.
Faculty or entity in charge	CLSM

Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Learning outcomes
Master [120] : Business Engineering	INGE2M	5		
Master [120] : Business Engineering	INGM2M	5		