Course: Specialisation Sustainable Energy and the Digital Transformation (Kortrijk)

credits: 30

Course code	SUVM23SEDT
Name	Specialisation Sustainable Energy and the Digital Transformation (Kortrijk)
Study year	2025-2026
ECTS credits	30
Language	English
Coordinator	H.M. Moesker
Modes of delivery	Teaching method 1
Assessments	Specialisation Sustainable Energy and the Digital Transformation (Kortrijk) - Assignment

Learning outcomes

The modules in the specialisation ‘Sustainable Energy and the Digital Transformation’ are:

- Energy Audit & Dash boarding (electrical & thermal) (6 ECTS)
- Big Data & Internet of Things (6 ECTS)
- Artificial Intelligence (6 ECTS)
- Renewables, Storage & Smart Grids (electrical & thermal) (6 ECTS)
- Security (3 ECTS)
- Start Up School (3 ECTS)

Content

The specialisation ‘Sustainable energy & the digital transformation’ can be followed in Kortrijk – Belgium. Howest – University of Applied Science is located in ‘Kortrijk Weide’. This part of Kortrijk is an energy hub where research and education work closely together. On Kortrijk Weide there is a heat grid, lots of renewable energy sources, and different research projects are integrating smart controls to control multiple buildings in real time to optimise energy flows. Next, Howest is investing in energy storage systems to create a fully operational smart grid at this energy campus.

Energy consumption of a process or building is measured and published. This data is based on an audit or on a continuously follow up of the processes. Following research questions arise: What type of meter do we have to install and how do we get data in a secured format on the internet? Can we use a smart gird to maximize the use of renewable energy? Can we sell our energy to other companies and how does the energy market work?

The specialisation semester ‘Sustainable Energy and the Digital Transformation’ gives you the answers! We focus on energy audits, energy measurements and internet of things. Renewable energy production (electrical and thermal) gives us the opportunity to reduce the energy we buy from the grid. Smart devices and equipment combined with an energy traffic controller maximize the self-consumption of the generated energy. The data of the sensors and equipment must be secured and new devices use Artificial Intelligence to maximise the energy savings.

Overproduction can be stored in storage systems to be used when we have less production, or we sell the energy to others.

Included in programme(s)

European Master in Sustainable Energy System Management

School(s)

Institute of Engineering

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