

Course: Energy Systems Modelling & Applications

credits: 5

Course code	SUVH21ESMA	Modes of delivery	Teaching method 1
Name	Energy Systems Modelling & Applications	Assessments	Energy Systems Modelling & Applications - Assignment
Study year	2022-2023		
ECTS credits	5		
Language	English		
Coordinator	J. Bekkering		

Learning outcomes

By completing the module the student demonstrates knowledge and understanding of:

1. Simulation and optimisation models, the difference between these two and their applicability in energy systems modelling
1. Deterministic and stochastic energy system models, the difference between these two and their applicability
1. Sensitivity analysis and Monte Carlo techniques
1. The potential strengths and weaknesses of energy system models and is able to interpret the results with a critical view

And is able to:

1. Build a techno-economic-environmental energy system model in a suitable modelling environment, and based on a supply and demand pattern
1. Present the outcomes of the model in a scientific format

Content

In this 5 ECTS module the student will expand his/her knowledge of modelling (renewable) energy systems. The difference between simulation and optimisation, and deterministic and probabilistic models, are discussed, with typical applications. Sensitivity analysis and Monte Carlo techniques are explained and applied. A real life renewable energy system is modelled and optimised in an applicable modelling software environment. Modelling is done from a techno-economic-environmental perspective.

Included in programme(s)

European Master in Sustainable Energy System Management

School(s)

Institute of Engineering