Hanzehogeschool Groningen
University of Applied Sciences

Vak: Models and Scenarios — credits: 5

Vakcode	SUVH17DPS
Naam	Models and Scenarios
Studiejaar	2020-2021
ECTS credits	5
Taal	Engels
Coördinator	F. Pierie

Werkvormen	Werkvorm 1
Toetsen	Numerical Modelling - Opdracht Scientific Content - Computer, organisatie tentamenbureau

Leeruitkomsten

After completion of the module the student is able to:

- Obtain the knowledge of overall energy system integration.
- Design models and economic cases used for scenario development (optimized with respect to energetic-, economic- and technology-efficiency) in (strategic) decision making processes.
- Make and assess realistic scenarios
- Validate the models on scientific relevance

Have demonstrated knowledge and understanding of

- Models and Tools
- Model Design Process
- Verification & Validation
- Scenario planning and sensitivity analysis

Inhoud

In this module, students will acquire fundamentals of modelling techniques and methods, validation techniques, scenario planning, physical modelling, and economic modelling. In addition, the students will develop systemic vision of the energy system and learn how to model this as a whole. Within this module the focus will be placed on the relationships between the elements, e.g. production, storage, and use in energy systems. These relationships can be programmed in a model and then used to find optimal solutions, with respect to economics, efficiency, and environmental impacts. Before being able to achieve the aforementioned, the relationships themselves, being physical and economic, etc. have to be understood on a general level. The student must be able to construct a transparent model, validate the models, run scenarios in the model, and draw conclusions from the model in context of energy systems. To achieve the modules learning outcomes the students will receive lessons in theory, perform assignments and complete examinations. Within this module both theory and practice will be used to give the students a general understanding of the energy system and modeling within it.

Opgenomen in opleiding(en)

European Master in Sustainable Energy System Management

School(s)

Instituut voor Engineering