

## Vak: Applied Research Energy System

credits: 5

<b>Vakcode</b>	SUVH15IC2
<b>Naam</b>	Applied Research Energy System
<b>Studiejaar</b>	2020-2021
<b>ECTS credits</b>	5
<b>Taal</b>	Engels
<b>Coördinator</b>	J.J.A. Scheepens-Hasek

<b>Werkvormen</b>	Werkvorm 1
<b>Toetsen</b>	Progress Report & Presentation - Overige toetsing

### Leeruitkomsten

After completion of this module the student will:  
be able to (in a small group of 2-3 students, including individual sub-assignments):

1. Apply theoretical constructs, scientific principles, design knowledge and concepts to real life phenomena
2. Plan, communicate and justify a theoretically based framework for organization and analysis of information.
3. Develop, improve and/or demonstrate skills in the critical analysis of relevant literature and empirical background materials.
4. Write and defend a paper.

have demonstrated knowledge and understanding of:

1. The development of theory and deeper knowledge of Sustainable Energy System Management.
2. The recognition of theoretical constructs and scientific frameworks relevant to this field of academic endeavor.

### Inhoud

This course will introduce students to the research process for the generation of a semi-scientific paper, restricted to the more theoretical and conceptual phases. The research will focus on topics that are relevant in the Sustainable Energy Systems Management theory, related to the G6 design assignment. As such, the module research report has to be completed as a stand-alone product. The final theoretical research paper will be presented and defended in a form that allows appropriate discussion and feedback on the individual paper, as well as a more general discussion of the research area.

Three building blocks are considered in the module:

#### 1. Introduction into design and research methodology

The first block discusses several academic and journal paper writing approaches. Amongst others, students will learn about the following topics:

- Building a coherent scientific article;
- Identifying different types of research methodologies and their applications;
- Formulating relevant research questions, propositions and hypotheses;
- Formulating a conceptual model;
- Using the concept of a synthesis matrix;
- Learning how to publish literature;
- Using different methodological research perspectives and issues;
- Distinguishing between different design research paradigms and methods (research through design, design inclusive research, practice based design research).

#### 2. E-transition Systems from different theoretical perspectives

The second block will cover the different theoretical perspectives with respect to energy transition systems. Amongst others, the following perspectives will be discussed:

- Social innovation theory;
- Entrepreneurial theory;
- Social sciences theory
- Consumer behaviour theories;
- Probing & learning and resources theory;
- Governance-policy theory.

#### 3. Research paper writing and Public Defence

The third block includes the completion of the research paper and the public defence.

Course blocks

- Introduction and research methodology (12 hours - 24% content)
- Case study Sustainable Smart Off-Grid Energy System's Design (8 hours - 16 % content)
- E-transition Systems from different theoretical perspectives (20 hours - 36 % content)
- Research paper writing and Public Defence (16 hours - 24 % content)

### Opgenomen in opleiding(en)

European Master in Sustainable Energy System Management

### School(s)

Instituut voor Engineering

De ECTS onderwijscatalogus van de Hanzehogeschool Groningen wordt met de grootst mogelijke zorg samengesteld. Het is echter mogelijk dat de inhoud van de catalogus -en de daarin vervatte informatie- verouderd, incompleet of onjuist is. Aan de inhoud van de catalogus kunnen dan ook geen rechten worden ontleend.