

## Course: Energy Transport, Distribution & Storage

credits: 5

<b>Course code</b>	ZWVH20ETDS	<b>Modes of delivery</b>	Tutorial
<b>Name</b>	Energy Transport, Distribution & Storage	<b>Assessments</b>	Assignment ETDS - Assignment
<b>Study year</b>	2022-2023		Theory - Written, organised by STAD
<b>ECTS credits</b>	5		examinations
<b>Language</b>	English		
<b>Coordinator</b>	A. Perl		

### Learning outcomes

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

1. Applicability, design and interaction of electricity, gas and heat grids
2. consequences for quality of energy supply at increasing renewable energy penetration in energy systems
3. consequences of renewable energy penetration on capacity of and congestion in existing energy systems
4. the role of storage in energy systems, and in systems with integrated renewable energy technologies in particular
5. research and analysis methods related an experimental setup

And is able to:

6. Systematically investigate possible design concepts for a storage system based on critically analysing (empirical) data, leading to a proof-of-concept design based on technical requirements
7. do calculations on capacities and quality parameters in energy systems
8. systematically report experimental setup, method, results and conclusions in a lab report

### Content

In this module students will learn the basics of electricity and natural gas infrastructures, from production, transport, distribution, storage, to demand. They will learn to assess the possibilities of the integration of renewables in existing energy infrastructures: congestion problems, maintaining quality and reliability of supply. The basics of heat grids is also covered. As such, students will develop a systemic vision of energy systems

### Included in programme(s)

European Master in Renewable Energy

### School(s)

Institute of Engineering