

Course: Power2Hydrogen

credits: 5

Course code	RWVM23P2U	Modes of delivery	Education
Name	Power2Hydrogen	Assessments	Assignment 1 - Assignment
Study year	2026-2027		Assignment 2 - Assignment
ECTS credits	5		
Language	English		
Coordinator	A. Perl		

Learning outcomes

After completion of this module the student is able to:

1. Understand the main electrochemical concepts of electrical batteries, fuel cell and electrolyzers.
2. Apply the electrochemical concepts in hydrogen-based renewable mobility options.
3. Analyse the driving range of renewable transport systems that use electrical batteries, hydrogen fuel cell and electrolyzers.
4. Analyse the efficiency those systems.
5. Design and perform scientific experiments to analyse the performance of electrolyzers and fuel cells.

Content

Theory (3 EC):

- Electrochemistry basics
- Electrochemical storage - overview on electrochemical storage, including fundamentals of batteries and fuel cells. Limits and applications
- Electrolysis: theory and electrolyser design
- Fuel cells: theory and design

Experiments (2 EC):

- Electrolyser and fuel cell measurements

Adsorption (storage) measurements

Included in programme(s)

European Master in Renewable Energy

School(s)

Engineering, Life Sciences & ICT