Course: Sustainable Fuel Systems Design — credits: 5

Course code	RWVM23SFSD
Name	Sustainable Fuel Systems Design
Study year	2026-2027
ECTS credits	5
Language	English
Coordinator	J. Bekkering
Modes of delivery	Education
Assessments	Assignment 1 - Assignment Assignment 2 - Assignment

Learning outcomes

After completion of this module the student is able to:

1. define a research problem related to renewable energy supply chains
2. critically analyse relevant (scientific) literature
3. develop simulation models of energy systems, using appropriate methods and techniques, e.g. Material and Energy Flow Analysis (MEFA), Monte Carlo (MC)
4. understand optimisation methods for solving energy system problems, e.g. Linear Programming (LP) and Mixed Integer Linear Programming techniques (MILP)
5. explain the applicability, assumptions and limitations of energy system models
6. systematically report research question, methods, results, discussion and conclusions

Content

- Supply chain concepts: Material Flow Analysis, Life Cycle Cost of Energy
- Sustainability: concepts, Primary Energy Input Output Ratio, greenhouse gas emission saving, well-to- wheel analysis (WTT, TTW, WTW)
- Theory on LP, MILP, sensitivity analysis, Monte Carlo
- MATLAB modeling

Included in programme(s)

European Master in Renewable Energy

School(s)

Engineering, Life Sciences & ICT

share your talent. move the world.

Although every effort has been taken to ensure the accuracy of the information in the ECTS Course Catalogue, we cannot guarantee that the content and the information contained in it is always up-to-date, complete or true. Accordingly, no rights can be derived from the contents of the catalogue.