# 4TU.Energy Curriculum Overview

4TU. Energy

## ENERGY FOR LIFE

MSc Energy for life-molecular nutritional physiology of energy metabolism (6 ECTS)

BSc Thermodynamics of life processes (6 ECTS)

## CHEMISTRY FOR ENERGY

MSc Inorganic materials science (5 ECTS)

MSc Advanced catalysis (5 ECTS)

BSc Separation Technology (5 ECTS)

MSc Sustainable chemicals (5 ECTS)

MSc Catalytic processes & materials (5 ECTS)

MSc Electrochemistry: Fundamentals & techniques (5 ECTS)

MSc Electrochemical engineering (2.5 ECTS)

## HYDROGEN

MSc Hydrogen technology (5 ECTS)

## BATTERIES

BSc Electrical power systems (5 ECTS)

BSc Energy storage (5 ECTS)

MSc Decentral power generation and active networks (5 ECTS)

MSc 4TU responsible sustainability challenge (15 ECTS)

BSc Dynamics of energy systems (5 ECTS)

## SYSTEM TRANSITION

BSc Energy management (5 ECTS)

MSc Capita selecta economic matters for climate assessment (3 ECTS)

BSc Energy, economy and society (5 ECTS)

MSc Physical modelling (6ECTS)

BSc Modelling dynamic systems (6 ECTS)

MSc Energy management (4 ECTS)

MSc Optimization of sustainable energy systems (5 ECTS)

BSc Honors part energy transitions (15 ECTS)

MSc Critical sustainable futures (2 ECTS)

MSc Sustainable engineering (5 ECTS)

BSc Energy transition & sustainability (9 ECTS)

BSc Energy transition challenges (15 ECTS)

BSc Principles of biobased economy (6 ECTS)

MSc Circular sustainable business development (5 ECTS)

BSc Economics and governance of energy transitions (6 ECTS)

MSc Life cycle analysis (3 ECTS)

MSc Stakeholder analysis in sustainability transitions (2 ECTS)

BSc Sustainable electrical distribution networks (3 ECTS)

BSc Sustainable impact (5 ECTS)

MSc Sustainability and justice (2 ECTS)

MSc Power system dynamics (4 ECTS)

BSc Climate change: understanding the causes and solutions (5 ECTS)

MSc Sustainability politics and policies (5 ECTS)

MSc Policy and sustainability (3 ECTS)

MSc The sustainability game (2 ECTS)

BSc Sustainable civil engineering (0 ECTS)

## RENEWABLE ENERGY SOURCES

BSc Reliability of sustainable power systems (3 ECTS)

BSc Introduction to Electrical Power Engineering (6 ECTS)

BSc Energy efficiency (3 ECTS)

MSc Energy conversion technology (5 ECTS)

BSc Electrical energy conversion (5 ECTS)

MSc Electrical power systems of the future (4 ECTS)

MSc Physical aspects of energy and sustainable development(5 ECTS)

MSc Floating offshore wind energy (3 ECTS)

MSc Airborne wind energy (3 ECTS)

MSc Energy from biomass (5 ECTS)

MSc Renewable energy: sources, technology applications (6 ECTS)

BSc Sustainable energy supply (5 ECTS)

BSc Sustainable energy sources (5 ECTS)

MSc Solar energy (5 ECTS)

MSc Geo-energy engineering application (6 ECTS)

BSc Mechanics and transport by flow in porous media (5 ECTS)

MSc Physics of energy materials (6 ECTS)

BSc Renewable Energy Technology (3 ECTS)

BSc Honors part 1 nuclear fusion (15 ECTS)

BSc Physics of energy: sources, transport and storage (5 ECTS)

BSc Energy storage and transport (5 ECTS)

BSc Energy (5 ECTS)

MSc Business model for sustainable energy (5 ECTS)

MSc Water management (4 ECTS)

MSc Sustainability and law (3 ECTS)

MSc Psychology of sustainability (5 ECTS)

MSc Environmental management (4 ECTS)

BSc Energy transition perspectives (0 ECTS)

## COMPUTER SYSTEMS

MSc Digital twin earth for Water, energy, and food security (5 ECTS)

MSc Cyber security of power grids (4 ECTS)

MSc Intelligent electrical power grids (4 ECTS)

MSc Distributed energy management for smart grids (5 ECTS)

MSc Digitalization & sustainability (2 ECTS)

## EARTH SYSTEMS

BSc Mineral Resource Geology and Modelling (5 ECTS)

MSc Climate physics (9 ECTS)

MSc Grand Challenges and Applied Earth Sciences (9 ECTS)

MSc Energy storage (5 ECTS)

## BUILT ENVIRONMENT

BSc House and anchoring in the landscape (10 ECTS)

BSc Construction materials and sustainability (5 ECTS)

BSc Health & sustainable living environment (5 ECTS)

BSc Introduction building physics and material science (5 ECTS)

MSc Building integrated photovoltaics (5 ECTS)

BSc Circularity and energy performance in the built environment (5 ECTS)

BSc Residential building and residential environment (10 ECTS)

BSc Construction and climate design (5 ECTS)

BSc Introduction building performance (5 ECTS)

MSc Energy, water and nutrient cycles in the built environment (6 ECTS)

## HEAT

MSc Transport phenomena (5 ECTS)

MSc Advanced thermal energy storage (2.5 ECTS)

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*Courses written in **purple** are co-organized courses in 4TU context;
*More course info in hyperlinks or attachments is available in "Downloads";
*Course without underline has an attachment for course details.

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