

COURSE DETAIL

ENERGY SCIENCE

Country

Netherlands

Host Institution

Leiden University College

Program(s)

Leiden University College

UCEAP Course Level

Upper Division

UCEAP Subject Area(s)

Environmental Studies

UCEAP Course Number

100

UCEAP Course Suffix**UCEAP Official Title**

ENERGY SCIENCE

UCEAP Transcript Title

ENERGY SCIENCE

UCEAP Quarter Units

6.00

UCEAP Semester Units

4.00

Course Description

For the past century, our modern world has thrived upon the incredible energy density of fossil fuels. Fossil fuels are the bedrock of our society, providing mobility, food, housing, and long lifespans to a growing population. Unfortunately, fossil fuel usage also releases gases into the atmosphere that warm the planet. Global warming is arguably the most critical problem facing humanity; it will continue to influence our civilization for many decades – and even centuries – to come. Developing alternatives to the continued exploitation of oil, gas, and coal is crucial if we are to mitigate the impacts of climate change on human communities and the ecosystem. This course lays the scientific foundations of energy generation. First, students investigate the physics of energy and power. Then, they investigate why fossil fuels have been so successful in developing and sustaining our modern lifestyle. The core of this course is an analysis of the varied types of renewable and sustainable energies. The course profiles wind, wave, tidal, hydro, solar, and geothermal energies. It also investigates bio fuels, and nuclear energy options. In doing so, the opportunities, advantages, and disadvantages of each energy type are assessed; always keeping in mind the scientific, social, and environmental plausibility of each energy source.

Language(s) of Instruction

English

Host Institution Course Number

8002EES03Y

Host Institution Course Title

ENERGY SCIENCE

Host Institution Course Details

<https://studiegids.universiteitleidennl/en/courses/97735/energy-science>

Host Institution Campus

Host Institution Faculty

Host Institution Degree

Host Institution Department

Earth, Energy, and Sustainability

Course Last Reviewed

2020-2021

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