

## 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 Campus

## Host Institution Faculty

## Host Institution Degree

## Host Institution Department

Earth, Energy, and Sustainability

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