COURSE DETAIL

ENERGY SYSTEMS IN A SUSTAINABLE WORLD
Country Hong Kong
Host Institution Hong Kong University of Science and Technology (HKUST)
Program(s) Hong Kong University of Science and Technology
UCEAP Course Level Lower Division
UCEAP Subject Area(s) Mechanical Engineering Engineering
UCEAP Course Number 19
UCEAP Course Suffix
UCEAP Official Title ENERGY SYSTEMS IN A SUSTAINABLE WORLD
UCEAP Transcript Title ENERGY SYS/SUSTAIN
UCEAP Quarter Units 4.50
UCEAP Semester Units 3.00

Course Description

This course examines the full spectrum of energy systems used in modern society, including fossil fuels and renewable energy sources, with attention to power generation technologies, energy security, and sustainability challenges. Topics include energy conversion, utilization, and storage for renewable technologies such as wind, solar, biomass, fuel cells, and hybrid systems, grounded in fundamental thermodynamics concepts. The course also explores energy-efficient technologies in buildings, products, manufacturing, and infrastructure, as well as the environmental and social impacts of energy use. Through case studies and discussion, the course addresses debates and misconceptions surrounding sustainable energy systems, energy entrepreneurship, and the role of renewable energy in mitigating climate change and supporting contemporary lifestyles.

Language(s) of Instruction
English

Host Institution Course Number
MECH1902

Host Institution Course Title
ENERGY SYSTEMS IN A SUSTAINABLE WORLD

Host Institution Course Details
https://prog-crs.hkust.edu.hk/ugcourse/2025-26/search?keyword=MECH1902

Host Institution Campus

Host Institution Faculty

Host Institution Degree

Host Institution Department
Mechanical and Aerospace Engineering

Course Last Reviewed

2025-2026

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