SHORT COURSE DESCRIPTION
This course introduces the definition, production and uses of energy. Based on the thermodynamic principles, the methods for conversion of fuels and renewable energy sources (solar, wind etc.) into useful forms of energy are explained. Emphasis is also given to the problems associated with the consumption of energy such as the greenhouse gases and pollution, and how to control those.

READING MATERIALS
Prerequisite subjects for this class are general physics, thermodynamics, and fluid mechanics. The class materials will be provided online. The textbook will be ‘energy science: principles, technologies, and impacts’ written by John Andrews and Nick Jelley,, 2nd Ed. Oxford University Press.

COURSE REQUIREMENTS AND GRADING
The portion for grading will be as follows; attendance-10%, homework-10%, presentation-10%, midterm-35%, final-35%. All ISS classes are pass/fail based on the student academic achievement evaluated by grades on a scale of 100 points (grade of 60 or above is Pass). SKKU regulations require students to attend at least 80% of all classes.

COURSE SCHEDULE

– WEEK I –
Tuesday (26 June): Introduction to the course and energy issues
Wednesday (27 June): Greenhouse gas
Thursday (28 June): Thermal energy
Friday (29 June): Hydroenergy

– WEEK II –
Monday (2 July): Wind energy I
Tuesday (3 July): Wind energy II
Wednesday (4 July): Mid-term exam
Thursday (5 July): Solar energy I

– WEEK III –
Monday (9 July): Solar energy II
Tuesday (10 July): Biomass

Wednesday (11 July): Electric vehicle

Thursday (12 July): Smartgrid and Energy storage system (ESS)

--- WEEK IV ---

Monday (16 July): Fuels and combustion

Tuesday (17 July): Carbon sequestration and storage

Wednesday (18 July): Final exam