

Introduction to Energy Technology 能源技術概論

Serial Number	30006
Course Code	SDA014-*
Instructor	Wu, Jiunn-Chi
Course Name(Chinese)	能源技術概論
Course Name(English)	Introduction to Energy Technology
Credit	3
Teaching goal	<p>This introductory course emphasizes the physical principles behind energy and its effects on our environment. In the class, we will continue emphasize the technical aspects of energy and the impact on our environment as well. Objectives: 1.It seeks to explain the basic physical principles behind the use of energy, including the study of mechanics, electricity and magnetism, thermodynamics, and atomic and nuclear physics. 2.It examines different aspects of each energy resource, including the principles involved and environmental and economic consequences of its use. 3.It seeks to integrate the complex questions of energy policy and possible energy strategies.</p>
Teaching content	<p>Week Topics</p> <ol style="list-style-type: none">1 Introduction2 Energy Mechanics3 Conservation of Energy4 Heat and Work5 Home Energy Conservation and Heat-Transfer Control6 Solar Energy: Characteristics and Heating7 Energy from Fossil Fuels8 Air Pollution and Energy Use9 Global Warming, Ozone Depletion, and Waste Heat10 Electricity: Circuits and Superconductors11 Electromagnetism and the Generation of Electricity12 Electricity from Solar, Wind, and Hydro13 Nuclear Power: Fission14 Effects and Uses of Radiation15 Future Energy Alternatives: Fusion

	16 Biomass: From Plants to Garbage 17 Geothermal Energy 18 Final test
Textbooks/References	R. A. Hinrichs, M. H. Kleinbach, Energy: Its Use and the Environment, 5th Ed., Brook/Cole, 2012.
Way of Instruction	Lecture 講授
Grading	homework 20%, reports 30%, midterm 20%, final exam 30%
Office Hour	8:30-9:00 Monday-Friday

Core Competencies of Department	Rating	Corresponding Assessments
Global vision	(5) Very High	Assignments , Research Report(printed on paper) , Attendance/Performance
Environmental sustainability	(5) Very High	Assignments , Research Report(printed on paper) , Attendance/Performance
Professional knowledge	(5) Very High	Test/Exam , Assignments , Presentation/Oral Exam , Research Report(printed on paper)
Expressiveness & teamwork	(4) High	N/A