

2026 Fall
TIGP Sustainable Chemical Science and Technology Program
Introduction to Sustainable Chemical Science and Technology I
Period: 2026/Sep. - 2026/Dec.
Classroom: B105 Classroom, IoC, AS
Time: AM09:10-12:00

- Goals:
1. Know the backgrounds and chemistry of sustainability-related issues.
 2. Learn the spirit of green chemistry and the challenges/opportunities in the real world.
 3. Get exposed to important research directions.

Theme	Topic	Lecturer	Date
1	Importance of Chemistry, Course Expectation, and Literature Search Skill	Hung, Chen-Hsiung	2026/09/09
2	Chemistry Related Global Challenges		
	2.1 Global Materials Cycling (Carbon Cycle, Nitrogen Cycle, Ocean Acidification, Heavy Metals...)	Hung, Chen-Hsiung	2026/09/16
	2.2 Climate Change and Our Future Alternative Energy	Hou, Cheng-Yi	2026/09/23
	2.3 Water Scarcity and Sustainable Water Supply - Principles and Chemistry	Chuang, Yi-Hsueh	2026/09/30
	2.4 Environmental Impact of Chemicals (Organic Toxic Compounds, Persistent Compounds, Ozone Hole...)	Chou, Charles C.-K.	2026/10/07
	2.5 Catalysis for Control of Atmospheric Pollutants - An Introduction	Lin, Liang-Yi	2026/10/14
3	Sustainability and Green Chemistry		
	3.1 Spirits	Hung, Chen-Hsiung	2026/10/21
	3.2 Principles		
	3.3 Metrics to Evaluate Greenness and Life Cycle Analysis		2026/10/28
	*** Midterm Report Submission Deadline***		2026/10/28
	3.4 Alternative Reaction Energy Sources (Microwave, Mechano, Ultrasound,	Lin, Chih-Hsiu	2026/11/04
	3.5 Solvents (water, supercritical fluids, ionic liquids, switchable solvents, bio-based solvents...)	Chein, Rong-Jie	2026/11/11
	3.6 Catalysis (Heterogeneous, Homogeneous, Phase Transfer, Bio, Photo, and the more recent Organo, Earth Abundant Element...)	Chiang, Ming-Hsi	2026/11/18
			2026/11/25
	3.7 Basic Toxicology, Bioremediation, and Design Principles for	Li, Wen-Shan	2026/12/02
	3.8 Some Real World Cases in Industry	Hung, Chen-Hsiung	2026/12/09
	3.9 Challenges in Green Chemistry		
	Final Report Submission Deadline	No Class	2026/12/16