

2024 Fall

TIGP Sustainable Chemical Science and Technology Program
Introduction to Sustainable Chemical Science and Technology

Period: 2024/Sep. - 2024/Dec.
 Classroom: B105, 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			
1	Importance of Chemistry, Course Expectation, and Literature Search Skill	Hung, Chen-Hsiung	2024/09/04
2	Chemistry Related Global Challenges		
	2.1 Global Materials Cycling (Carbon Cycle, Nitrogen Cycle, Ocean Acidification, Heavy Metals...)	Hung, Chen-Hsiung	2024/09/11
	2.2 Climate Change and Our Future Alternative Energy	Chen, Chin-Ti	2024/09/18
	2.3 Water Scarcity and Sustainable Water Supply - Principles and Chemistry	Chuan, Yi-Hsueh	2024/09/25
	Typhoon Day		2024/10/02
	Class suspension		2024/10/09
3	Sustainability and Green Chemistry		
	3.1 Spirits	Hung, Chen-Hsiung	2024/10/16
	3.2 Principles		2024/10/23
	3.3 Metrics to Evaluate Greeness and Life Cycle Analysis		
	2.5 Catalysis for Control of Atmospheric Pollutants - An Introduction	Lin, Liang-Yi	2024/10/30
*** Midterm Report Submission Deadline***			2024/10/30
	3.4 Alternative Reaction Energy Sources (Microwave, Mechano, Ultrasound, Flow...)	Lin, Chih-Hsiu	2024/11/06
	3.5 Solvents (water, supercritical fluids, ionic liquids, switchable solvents, bio-based solvents...)	Chein, Rong-Jie	2024/11/13
	3.6 Catalysis (Heterogeneous, Homogeneous, Phase Transfer, Bio, Photo, and the more recent Organo, Earth Abundant Element...)	Chiang, Ming-Hsi	2024/11/20 2024/11/27
	3.7 Basic Toxicology, Bioremediation, and Design Principles for Degradation/Less	Li, Wen-Shan	2024/12/04
	3.8 Some Real World Cases in Industry	Hung, Chen-Hsiung	2024/12/11
	3.9 Challenges in Green Chemistry		
	2.4 Environmental Impact of Chemicals (Organic Toxic Compounds, Persistent Compounds, Ozone Hole...)	Chou, Charles C.-K.	2024/12/18
Final Report Submission Deadline			2024/12/18