

**2021 Fall**

<b>TIGP Sustainable Chemical Science and Technology Program</b>			
<b>Introduction to Sustainable Chemical Science and Technology</b>			
		<b>Period: 2021/Sep. - 2021/Dec.</b>	
		<b>Classroom: B105, IoC, AS</b>	
		<b>Time: AM09:10-12:00</b>	
Goals:	<b>1. Know the backgrounds and chemistry of sustainability-related issues.</b> <b>2. Learn the spirit of green chemistry and the challenges/opportunities in the real world.</b> <b>3. Get exposed to important research directions.</b>		
<b>Theme</b>			
<b>1</b>	<b>Importance of Chemistry, Course Expectation, and Literature Search Skill</b>	Chao, Ito	2021/9/22
<b>2</b>	<b>Chemistry Related Global Challenges</b>		
	2.1 Climate Change and Our Future Alternative Energy	Chen, Chin-Ti	2021/9/29
	2.2 Global Materials Cycling (Carbon Cycle, Nitrogen Cycle, Ocean Acidification, Heavy Metals...)	Hung, Chen-Hsiung	2021/10/6
	2.3 Water Scarcity and Sustainable Water Supply - Principles and Chemistry	Chuan, Yi-Hsueh	2021/10/27
	2.4 Environmental Impact of Chemicals (Organic Toxic Compounds, Persistent Compounds, Ozone Hole...)	Chou, Charles C.-K.	2021/10/20
	2.5 Catalysis for Control of Atmospheric Pollutants - An Introduction	Lin, Liang-Yi	2021/10/13
<b>3</b>	<b>Sustainability and Green Chemistry</b>		
	3.1 Spirits	Chao, Ito	2021/11/3
	3.2 Principles		2021/11/10
	3.3 Metrics to Evaluate Greenness and Life Cycle Analysis		
	<b>***Midterm Exam Week***</b>	<b>No class</b>	2021/11/17
	3.4 Solvents (water, supercritical fluids, ionic liquids, switchable solvents, bio-based solvents...)	Chein, Rong-Jie	2021/11/24
	3.5 Alternative Reaction Energy Sources (Microwave, Mechano, Ultrasound, Flow...)	Lin, Chih-Hsiu	2021/12/1
	3.6 Catalysis (Heterogeneous, Homogeneous, Phase Transfer, Bio, Photo, and the more recent Organo, Earth Abundant Element...)	Chiang, Ming-Hsi	2021/12/8 2021/12/15
	3.7 Basic Toxicology, Bioremediation, and Design Principles for Degradation/Less	Li, Wen-Shan	2021/12/22
	3.8 Some Real World Cases in Industry	Chao, Ito	2021/12/29
	3.9 Challenges in Green Chemistry		
	<b>*** Semester Report deadline***</b>	<b>No class</b>	2021/1/5