Browse Syllabus

Subject Numbering	TCH-MAC303J
Year	2022
Subject	Chemical and Biomolecular Engineeing I
Credit(s)	2
Instructor	PICHIERRI FABIO SHUICHI OI TOMOHITO KAMEDA KEISHI SUGA KEIICHI TOMISHIGE YAMATO HAYASHI MASAYA MITSUISHI
Notes	

Language	英語
Object in Class subject and Object and summary of class and Goal of study(J)	---------- Google Classroom用のクラスコードは「xc2y33n」です。 ----------
Object in Class subject and Object and summary of class and Goal of study	Google Classroom class code: xc2y33n Purpose/Abstract We are surrounded by a large number of chemical products manufactured with various types of materials including organic, inorganic and their composite materials. Even in our body, biological materials are constantly being produced with the help of specialized enzymes and biochemical reactions. The objective of the present course is to provide chemistry-oriented topics concerned with the development of functional materials in various areas of engineering. Goal Students will learn some basic aspects of chemical production, with special emphasis on environmentally friendly methodologies for the synthesis of fine chemicals and advanced materials. Contents This course is offered in the Spring semester with the goal of understanding chemical and biomolecular engineering. Various topics will be presented by different instructors, as listed in the course schedule below, with each instructor giving two lectures for each topic.
Other subject is relevant and complete a point to notice(J)	
Other subject is relevant and complete a point to notice	It would be desirable that the students attending this class have wide knowledge of fundamental chemistry at the undergraduate course level.
Contents and progress schedule of class(J)	
Contents and progress schedule of class	1. Chemistry of carbon nanomaterials by Assoc. Prof. Fabio PICHIERRI 1-1. Structure and bonding in organic molecules 1-2. Fullerenes, carbon nanotubes and graphene 2. Catalytic production of chemicals from biomass by Prof. Keiichi TOMISHIGE 2-1. Production of pure platform chemicals from biomass 2-2. Conversions of biomass-derived platform chemicals 3. Chemistry of polymer nanoassemblies by Prof. Masaya MITSUISHI 3-1. Polymer nanosheets 3-2. Cyclosiloxane building blocks 4. SDGs nanomaterial processing by Assoc. Prof. Yamato HAYASHI 4-1. Concept of nanomaterial processing in SDGs 4-2. Application of nanomaterial processing in SDGs

	5. Fine synthetic organic chemistry using metallic reagents by Prof. Shuichi OI 5-1. Synthetic methodologies using metallic reagent 5-2. Synthesis of luminescent materials 6. Chemistry of surfactant and amphiphile in water by Assoc. Prof. Keishi SUGA 6-1. Basic aspects of surfactant self-assembly 6-2. Application of self-assemblies: food, cosmetic, and medicine 7. Technology for protection and purification of aquatic environment by Assoc. Prof. Tomohito KAMEDA 7-1. Water treatment technology for hazardous substances 7-2. Application of inorganic compounds
self study(J)	ノートや配布資料を復習し、理解を深める。
self study	To deepen understanding after each class, review and summarize the content of learning looking back at one's own notes, the handout or prints that were delivered by each instructor.
Record and evaluation method(J)	レポート、課題、授業で実施する小テスト等により学修目標への達成度を総合的に評価する。
Record and evaluation method	Evaluation is performed comprehensively based on reports, homework, short tests etc.
Textbook and references	
URL	
Attached file	
Office hours(J)	
Office hours	After each lecture in the class room, otherwise any time at his/her office but an appointment should be made in advance.
Notes	The handout and/or prints will be delivered by each instructor in his/her class.
Practical business	
In addition	
Last Update	2022/03/25 09:26
	1単位の授業科目は、45時間の学修を必要とする内容をもって構成することを標準としています。1単位の修得に必要となる学修時間の目安は、「講義・演習」については15～30時間の授業および授業時間外学修（予習・復習など）30～15時間、「実験、実習及び実技」については30～45時間の授業および授業時間外学修（予習・復習など）15～0時間です。 One-credit courses require 45 hours of study. In lecture and exercise-based classes, one credit consists of 15-30 hours of class time and 30-15 hours of preparation and review outside of class. In laboratory, practical training, and practical skill classes, one credit consists of 30-45 hours of class time and 15-0 hours of preparation and review outside of class.

One-credit courses require 45 hours of study. In lecture and exercise-based classes, one credit consists of 15-30 hours of class time and 30-15 hours of preparation and review outside od class. In laboratory, practical skill classes, one credit consists of 30-45 hours of class time and 15-0 hours of preparation and review outside of class.