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2021 Academic Year Course Description and Syllabus

Course Name	Instructor Name
Organic Chemistry 1(2credits) [BIOI231] Fundamental Organic Chemistry(2credits) [ENES304] Organic Chemistry 1(2credits) [SESI241]	Masato Ito

Course numbers are displayed in blue color after course names.

Semester Spring Semester

Course Sub Title (for general course and seminars)

Organic Chemistry, an Introductory Course

General Description

Students are expected to comprehend the abundance of Organic Compounds and their importance, as well as to acquire fundamental concepts and thinking of Organic Chemistry and to apply them to solve specific problems.

Course materials, practice problems and other information will be provided through the below web page:

url = <http://www.t.soka.ac.jp/chem/yuki/>

Students are requested to frequently visit this website.

Goals and Objectives

Learning Outcomes (tentative)

(A2) To comprehend the importance of learning fundamentals of organic chemistry, to self-evaluate the understanding and performance, and to fulfill the deficiencies through active learning.

The Goal required for students is A level.

(B1) To acquire broad knowledge, to comprehend fundamentals of organic chemistry and to have the ability to explain basic principles of organic chemistry.

The Goal required for students is B level.

The levels (A-C) refer to the common level description in the faculty.

General Education / Faculty Courses: Most relevant Learning Outcomes for this course.

- ◎ Students are able to learn the knowledge necessary in the specialized field and utilize it.
Students are able to have an inquiring mind/intellectual curiosity and collect the related knowledge from a wide range of information media.
- Students are able to analyze the issues/problems and solve them through critical/creative thinking.
Students are able to communicate with each other in a group.
Students are able to properly describe opinions and claims of their own.
Students are able to actively take an action under their self-management and display their leadership.

Students are able to have a sense of ethics and be aware of the social contribution and responsibility.

Students are able to be conscious of their contribution to the international communities.

Course Syllabus

Content		
Class 1	Lecture contents	Guidance Introduction: History and structure of organic chemistry
	Self-study Assignments	Review of Chemistry A and B Submission of practice report
Class 2	Lecture contents	Atoms and Bonding in Organic Compounds
	Self-study Assignments	Submission of Pre-report Submission of practice report
Class 3	Lecture contents	Hydrocarbons (1)
	Self-study Assignments	Submission of Pre-report Submission of practice report
Class 4	Lecture contents	Hydrocarbons (2) Conjugate system and delocalization of pi electrons (1)
	Self-study Assignments	installation of Accerlys Draw and WinMOSar Presentation of Structure and Molecular Modeling
Class 5	Lecture contents	Conjugate system and delocalization of pi electrons (2) Functional Groups (1)
	Self-study Assignments	Submission of Pre-report Submission of practice report
Class 6	Lecture contents	Functional Groups (2)
	Self-study Assignments	Submission of Pre-report Submission of practice report
Class 7	Lecture contents	Structure-Property Relationship
	Self-study Assignments	Submission of Pre-report Submission of practice report
Class 8	Lecture contents	Strength of organic acids and bases Stereochemistry: Conformation (1)
	Self-study Assignments	Submission of Pre-report Submission of practice report
	Lecture contents	Conformation (2) Configuration (1)

Class 9	Self-study Assignments	Submission of Pre-report Submission of practice report
	Lecture contents	Configuration (2)
Class 10	Self-study Assignments	Submission of Pre-report Submission of practice report
	Lecture contents	Practice in Computer-aided Structure Drawing and Molecular Design
Class 11	Self-study Assignments	Submission of Pre-report Submission of practice report
	Lecture contents	Fundamentals of Organic Reactions
Class 12	Self-study Assignments	Submission of Pre-report Submission of practice report
	Lecture contents	Nucleophilic Substitutions
Class 13	Self-study Assignments	Submission of Pre-report
	Lecture contents	Elimination and Addition
Class 14	Self-study Assignments	Submission of Pre-report Submission of practice report
	Lecture contents	Addition to carbonyl Groups Electrophilic Substitution of Aromatics
Class 15	Self-study Assignments	Submission of Pre-report Submission of practice report

Evaluation/Assessment

Assessment	Percentage	Evaluation Criteria (Explanation)
Final Exam	100%	Final exam includes the basic knowledge of organic chemistry learned in high schools and first year classes.
Midterm		
Papers	0%	Weekly exercises (up to 5%)
Performance/Works		
Continuous Assessment (quizzes, assignments, etc.)	0%	Preparatory study and pre-reports (up to 5%)
Other		
		"Reports" and "Continuous Assessment" may be added in the total evaluation up to the figures presented.

Remarks about grading

Weekly practices are marked and returned, which are evaluated not by performance but by attitude and effort.

Grading Method:ABC

Course Materials

1. Lecture Notes in Organic Chemistry. See the above www page.
2. Molecular Models
3. ・丸善「HGS 分子構造模型・有機学生用セット」2,400円

Reference Materials

1. McMurry "Fundamentals of organic Chemistry 6th version"
2. 加藤明良、鍋島達弥「有機化学のしくみ」三共出版 2300円
3. 竹内敬人「よくある質問 立体化学入門」講談社 2625円
4. タロウズ「モル・タロウ基本Bセット」1,728円: <http://www.talous-world.com/>
5. 川端 潤「ビギナーズ有機化学」化学同人 2310円
6. 大野惇吉「大学生の有機化学」三共出版 2625円
7. D. R. Klein, 'Organic Chemistry as a Second Language-Translating the Basic Concepts, 2nd ed', Wiley, 2008.
8. D. R. Klein, 'Organic Chemistry as a Second Language-First Semester Topics, 4th ed', Wiley, 2017.

See the above www page.

Advice for Prospective Students

Enter the classroom with the preparatory study report.
Make use of Tutorials and Practices.

Estimated time to prepare and to review for each class session. (incl. assignments, tests, papers, etc) : 4hrs

Implementation of Active Learning

Yes
- Others

Will you use ICT for class or to support self-learning?

Yes
- Portal site (forum, questionnaire functions)
- Others

How to give feedback for assignments (mid-term exams, reports, etc.)

Give feedback via portal site or email regardless of class hours.
Correct and return tests or reports.

Language used in class

Japanese

Print

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Link URL: <https://plas.soka.ac.jp/csp/plas/slb.csp?nd=2021&sm=1&mk=11&lc=108654>