Course Syllabus (Spring Semester, 2021)

Course Title: Organic Chemistry I
Course Number: 20569/01, 3 credits
Instructor: Soo Young Ko, Ph.D., FRSC
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1. The Course Objectives

Organic chemistry is the study of carbon compounds, which include most of bio-molecules as well as synthetic materials. Therefore, organic chemistry is closely related to many areas of life sciences and engineering, including biology, medical and pharmaceutical sciences, and food and environmental engineerings.
This course begins with basic concepts of structures and bondings in organic compounds, acid-base and stereochemistry. The course then moves on to some of the organic reactions including nucleophilic substitutions and elimination reactions of alkyl halides, and electrophilic addition reactions of alkene and alkynes. Finally, the course will conclude with the chemistry of alcohols.
Throughout the course, emphasis will be given to the organic reaction mechanism, i.e., the basic principles of organic chemistry that govern almost every organic reactions.

2. Text and References

Text: L.G. Wade, Jr. and J. W. Simek "Organic Chemistry", 9th Ed., 2017, Pearson

References:
1) Janice Gorzynski Smith, Organic Chemistry, 5th Ed., 2017, McGraw Hill
2) William H. Brown, Christopher S. Foote, Brent L. Iverson and Eric V. Anslyn, Organic Chemistry, 5th Ed., 2009, Brooks/Cole
3) John McMurry Organic Chemistry, 7th Ed., 2008, Thomson

3. Lecture schedule

week	contents	chapters
1	Introduction and Review	1
2	Structure and Properties of Organic Molecules	2
3	Structure and Stereochemistry of Alkanes	3
4	The Study of Chemical Reactions	4
5	Stereochemistry	5
6	Alkyl Halides: Nucleophilic Substitution	6
7	Structure and Synthesis of Alkenes: Elimination	7
8	Mid-Exam Period Structure and Synthesis of Alkenes	7
9	Structure and Synthesis of Alkenes	7
10	Reactions of Alkenes	8
11	Reactions of Alkenes	8
12	Alkynes	9
13	Structure and Synthesis of Alcohols	10
14	Reactions of Alcohols	11
15	Reactions of Alcohols	11
16	Final Exam period	

4. Evaluations

Mid Exam I	100 (Ch ~ 4)
Mid Exam II	110 (Ch ~ 7)
Final Exam	130 (Ch ~ 11)
Assignments	110
Total	450

5. Course Format

in-person + on-line hybrid

1) The course will consist of two parts:
   i) Lecture works (on-line for everybody).
      Lecture notes and lecture videos will be provided.
   ii) Problem-solving and Q&A sessions (in-person participations optional)
      - In-person sessions for discussion, Q&A, problem solving etc.
      - About once per week (Thursdays, P3, but not every week, schedule TBA)
      - Participations for these in-person sessions are optional.
      - For those opting for a full on-line mode, relevant materials will be provided.

2) The course format is subject to change depending on the COVID-19 situations.
3) Exam formats will be announced at later dates.