

CH352 A & B: Chemistry Major Lab II

(Friday Session)

Important notice:

All students are required to attend the orientation on March 8 (students enrolled in CH352 A & B). Missing the orientation will result in a significant point deduction in the total score (Maximum A-grade).

Course Description:

This organic chemistry laboratory course is intended to provide students majoring in chemistry with fundamental and essential experimental skills and concepts in organic chemistry.

Course Prerequisites

Organic Chemistry I (CH221) and II (CH223)

Class:

Fri (CH352 A & B) 13:00-19:00.

Laboratory:

Goong-ri Laboratory Building (E6-5), room# 502 (Class A) or 506(Class B).

Instructor:

Sunkyu Han (한순규, CH352B, sunkyu.han@kaist.ac.kr)

Yoonsu Park (박윤수, CH352A, yoonsu.park@kaist.ac.kr)

Teaching Assistant:

- Hojin Hong (홍호진, inetsy01@kaist.ac.kr)
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Website:

<http://www.chemlabinkaist.net/>

Grading Policy

5%: Lab Safety Education

20%: Pre-lab reports (hand-writing)

30%: Experiments and Results (Experiments and Results PPT files)

20%: Mid-term paper

25%: Final paper

Course Schedule (subject to change due to COVID-19 related issues)

| Week | Date | Contents |
|------|-------|---|
| 1 | 03/01 | No Class (Enjoy the first week of the semester) |
| 2 | 03/08 | Introduction to Organic Chemistry Lab (Orientation: Mandatory!). Safety, organic chemistry literatures, chemdraw, scifinder and more. Tips on how to ACE this course will be revealed on this day by Prof. Yoonsu Park. |
| 3 | 03/15 | Fisher Esterification: Introduction to Work-up |
| 4 | 03/22 | Oxime Synthesis: Introduction to TLC Analysis |
| 5 | 03/29 | 1-Phenylthiourea |
| 6 | 04/05 | Converting Aniline to Brominated Acetylde |
| 7 | 04/12 | No labs (Midterms & Midterm Paper preparation) |
| 8 | 04/19 | No labs (Good luck with the midterm exams) <u>Midterm Paper Due: 04/25 10 pm</u> |
| 9 | 04/26 | Separation of Unknown Compounds by Distillation |
| 10 | 05/03 | No labs (Children's Day) |
| 11 | 05/10 | Pyrylium Synthesis |
| 12 | 05/17 | Alcohol Oxidation Using Pyrylium Photocatalyst |
| 13 | 05/24 | No labs (Students' festival), tentative |
| 14 | 05/31 | Cinnamaldehyde |
| 15 | 06/07 | No labs (Finals & Final Paper preparation) |
| 16 | 06/14 | No labs (Good luck with your finals) <u>Final Paper Due: 06/20 10 pm</u> |

Lab Safety Education (5%)

Every student must complete 6 hours of lab safety education before attending your first laboratory session. The lab safety education videos can be accessed through the [KAIST Safety Portal] → [Lab Safety Management System] → [Lab Safety Education] → [Online Education]. Please ensure that you select 6 videos from the Chemical category.

Once you have completed the lab safety education, please send your certificate via email to the Chief TA, HoJin Hong, at inetsy01@kaist.ac.kr.

Pre-Lab Reports (20%)

Download the lab manual from the website. Read the manual and answer the pre-lab questions. Refer to references for answers to the pre-lab reports.

Hand-writing only (typing is not acceptable).

Use your pre-lab report during the lab and **SUBMIT to your TA** when you leave the lab.

Your TA will inspect the cleanness of your hood, bench, and glassware. Only after the approval of your TA, your pre-lab report will be accepted. Pre-lab reports that are not properly submitted won't be graded and will get to credit.

Grading Policy

- A: ~80% 이상이 reasonable answer 일 경우
- B: ~60% 이상이 reasonable answer 일 경우
- C: ~40% 이상이 reasonable answer 일 경우
- D: ~40% 이하만이 reasonable answer 일 경우

Experiments and Results PPT Files (30%)

Follow the instructions of the manual.

Adhere to the safety rules.

During the course of experiments, take notes of experimental set up, observations, data etc.

You may take photo of experimental set ups and result.

After finishing the labwork, generate a PPT file (**maximum 5 pages**) that contains the experimental data.

Submission of a text light, scheme (Chemdraw, see below on how to install it) and photo heavy PPT file is encouraged. That will make your life easier.

Submit your ppt file using Turnitin before the next lab starts.

Grading Policy

- A: ~80% 이상 적어야 할 데이터를 충실히 적은 경우
- B: ~60% 이상 적어야 할 데이터를 충실히 적은 경우
- C: ~40% 이상 적어야 할 데이터를 충실히 적은 경우
- D: ~40% 이하로 적어야 할 데이터를 충실히 적지 않은 경우

Midterm and Final Papers (20, 25%, respectively)

1. Online submission: www.turnitin.com

2. Create your account. Enter Class ID and Password (Provided by TA)
3. Use ACS style template from
<http://pubs.acs.org/paragonplus/submission/templates/acsPageWide-MSW2010.dotx>
4. Enter your name in Korean (한글로 이름과 성 입력). English for foreign students.
5. Submission due: Midterm paper: April 25, 10 pm; Final paper: June 20, 10 pm.
6. For chemical drawing, use ChemBioDraw software.
7. Reports should contain general contents: introduction, data & results, actual experimental procedures, discussion, and references.
8. Post-lab questions should be included in the paper.
9. Plagiarism results in zero for all reports involved (Determined by Chief TA and Professor, turnitin platform are very good at detecting similarity between reports. Copy and paste of published paper will also be detected in the turnitin platform. So don't do that!).
10. Late submission is not allowed in Turnitin website. You should send your lab report to Chief TA. The maximum score for the late report is B+.

Grading Criteria

Each items determined by A,B,C,D grade

Title: Succinct and clear title (5)

Abstract: (15)

Introduction: with background information, referencing (20)

Results: Data presentation, chemdraw (25)

Discussion: Data interpretation, chemdraw (25)

Conclusion: (10)

How to Download and Install Chemdraw Software

A. Go to

<http://www.cambridgesoft.com>

and create an ID and sign-in

B. Go to

<http://sitelicense.cambridgesoft.com/sitelicense.cfm?sid=2207>

Log-in using your KAIST email and obtain the Serial Number via email.

Serial number can be obtained only once by the KAIST email account. Be careful about the privacy of your account.

Laboratory Makeup Policy

- Make-ups are only for those who missed labs for a legitimate reason and got permission to make up lab. (Give a written documentation to Chief TA)
- In any cases, contact Chief TA before your lab for permission.**

- Missed labs without a valid excuse, shall count as zero (no credit for the prelab and experimental and results PPT) and the student will not be allowed to make up this missed lab.
- Missed scheduled make-ups will be counted as zero and will not be rescheduled unless exceptional circumstances exist.
- If more than two labs are missed without valid excuses student shall fail the course.
- Your lab TA will let you know the make-up schedule and the due dates for make-up reports.