

2024 SPRING Semester

General Chemistry Lab I (CH102)

Exp.0. Orientation

Department of Chemistry

2024. 2.



Congratulations all of you and
Welcome to
General Chemistry Laboratory
Class !

Today's Topics

- Introduction
- Utilizing Web System for Online Lab Class
- Lab Schedule
- Method of Evaluation / Grading
- Additional Information
- Watching Safety Video in the Laboratory



Introduction

- Course Information
- Course Objective
- Course Requirement

1. Course Information

- General Chemistry Lab I
 - Number : CH102
 - Lecture:Exp:Credit= 0:3h:1



2. Course Objective

- 1) To teach basic laboratory techniques
- 2) To introduce to elementary methods of assessing the significance of experimental measurements
- 3) To provide experiences that enable the students to acquire positive attitude toward CHEMISTRY, or SCIENCE

3. Course Requirement

Writing up and submission of lab reports.

- Pre-lab and Post-lab Assignments: Introduction & Questions
- Observations and experimental detail.
- Detailed method of processing the experimental data. (For Quantitative analytical experiments)
- Calculations and Conclusions regarding the accuracy and the precision of experimental results and errors and the inherent errors based on the measurements.



Lab Schedule

- Laboratory Experiments
- Time Table
- Manual
- General Chemistry Website

General Chemistry Lab I (CH102)

Time		Mon	Tue	Wed	Thu	Fri
a.m.	9:00~12:00	CH102-A	CH102-G	CH102-M	CH102-S	
		CH102-B	CH102-H	CH102-N	CH102-T	CH102-Y
		CH102-C	CH102-I	CH102-O	CH102-U	CH102-Z
p.m.	13:00~16:00	CH102-D	CH102-J	CH102-P	CH102-V	CH102-AA
		CH102-E	CH102-K	CH102-Q	CH102-W	CH102-AB
		CH102-F	CH102-L	CH102-R	CH102-X	CH102-AC

*Location: GoongNi Laboratory Bldg. (E6-5): Lab 402, Lab 406, & 704
(G1 Classes: A, D, G, J, M, P, S, V, AA / G2 Classes: B, E, H, K, N, Q, T, W, Y, AB /
G3 Classes: C, F, L, O, R, U, Z, AC)

General Chemistry Lab I (CH102)

Experiment # and Topics

Exp.0. Orientation : Introduction, Lab Schedule, and Method of Evaluation

Exp.1. A Carbonate Analysis: Molar Volume of Carbon dioxide (Experiment 13)

Exp.2. Periodic Table and Periodic Law (Experiment 11)

Exp.3. Quantum Chemical Calculation: The Potential Energy Curve and the Orbitals of H_2^+

Exp.4. Atomic and Molecular Structure (Experiment Dry Lab3)

Exp.5. Thermodynamics of the Dissolution of Borax (Experiment 26)

Exp.6. A Rate Law and Activation Energy (Experiment 24)

Exp.7. LeChatelier's Principle; Buffers (Experiment 16)

Exp.8. Alkalinity of a Water Resources (Experiment 20)

Exp.9. Galvanic Cells, the Nernst Equation (Experiment 32)

CH102 (Week 1 ~ 8)

Period	Exp#					Exp#/Lab#		
	Mon	Tue	Wed	Thu	Fri	G1	G2	G3
2/26-3/1	[No class]	[No class]	[No class]	[No class]	[No class]			
3/4~3/8	Expo	Expo	Expo	Expo	Expo	Expo/402	Expo/406	Expo/704
3/11-3/15	Exp1~3	Exp1~3	Exp1~3	Exp1~3	Exp1~3	Exp1/402	Exp2/406	Exp3/704
3/18-3/22	Exp1~3	Exp1~3	Exp1~3	Exp1~3	Exp1~3	Exp2/406	Exp3/704	Exp1/402
3/25-3/29	Exp1~3	Exp1~3	Exp1~3	Exp1~3	Exp1~3	Exp3/704	Exp1/402	Exp2/406
4/1-4/5	Exp4~6	Exp4~6	Exp4~6	Exp4~6	Exp4~6	Exp4/402	Exp5/406	Exp6/704
4/8-4/10-4/14	*	*		*	*			
4/15-4/19								

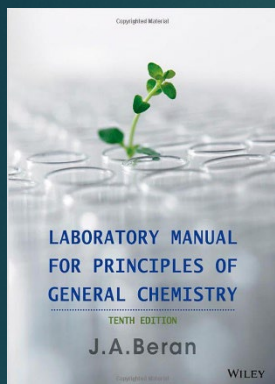
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 G3 Classes: C, F, L, O, R, U, Z, AC)

CH102 (Week 9 ~ 16)

Period	Exp#					Exp#/Lab#		
	Mon	Tue	Wed	Thu	Fri	G1	G2	G3
4/22-4/26	Exp4~6	Exp4~6	Exp4~6	Exp4~6	Exp4~6	Exp5/406	Exp6/704	Exp4/402
4/29- 5/3	Exp4~6	Exp4~6	Exp4~6	Exp4~6	Exp4~6	Exp6/704	Exp4/402	Exp5/406
5/6-5/10		Exp7~9	Exp7~9	Exp7~9	Exp7~9	Exp7/402	Exp8/406	Exp9/704
5/13-5/15-5/17	Exp7~9	Exp7~9		Exp7~9	Exp7~9	Exp8/406	Exp9/704	Exp7/402
5/20-5/24	Exp7~9	Exp7~9	Exp7~9	Exp7~9	Exp7~9	Exp9/704	Exp7/402	Exp8/406
5/27-5/31	Exp7~9		Exp7~9					
6/3~6/6-6/7	*	*	*		*			
6/10-6/14								

*Location: GoongNi Laboratory Bldg. (E6-5): Lab 402, Lab 406, & 704
 (G1 Classes: A, D, G, J, M, P, S, V, AA / G2 Classes: B, E, H, K, N, Q, T, W, Y, AB /
 G3 Classes: C, F, L, O, R, U, Z, AC)

3. Laboratory Manual



Laboratory Manual for Principles of
General Chemistry,
10th Edition, J. A. Beran, John Wiley & Sons, Inc.

You can purchase the textbook from online bookstore;
<https://product.kyobobook.co.kr/detail/S000003110569>
<http://www.yes24.com/Product/Goods/11074720>

Or Sciplus (사이플러스)

[http://www.sciplus.co.kr/sp/index.php?inc=books_main&cate=29
&sub=bdetail&no=2514](http://www.sciplus.co.kr/sp/index.php?inc=books_main&cate=29&sub=bdetail&no=2514)



4. General Chemistry Website

www.gencheminkaist.pe.kr

The experimental procedure file with photos will be uploaded continually at a link, [Experimental Procedure] of left frame on the general chemistry website. Please look over the procedure on the manual and the file in advance so that you can complete your work successfully.



Method of Evaluation and Grading

- **Grading & Examination Info**
- **Point distribution**



1. Grading & Examination Info

- ✓ Less than 50% of the total students in each class receive an A grade. Students who score below 50% of the total marks or fail to attend two or more experiments are assigned an F grade.
- ✓ **Examination Information:** No examination.

2. Point Distribution

The student will be evaluated based on his/her performance of the requirement listed below.

One Experiment = 100 points
(9 experiments X 100 points) + (safety training :100 points) = 1000 points in total

1) Laboratory Experiment

The assignment description of an experiment consists of three parts; Pre-lab Assignment, Attitude, and Lab Report. Points distribution is as follows.

1-1) Pre-Lab Assignment (20 points)

- (a) Introduction (Theory) (5 pts) and Procedure Summary (5 pts)
- (b) Quiz (10 pts)

1-2) Attitude (20 points)

- (a) lateness, lab safety or cleanup,
- (b) Concentration or comprehension

1-3) Laboratory Reports (60 points)

- (a) Result
- (b) Discussion
 - o Summary
 - o Assessing the results
 - o Conclusions
- (c) Reference
- (d) Post-lab questions



Part A. Pre-lab Assignment (20 pts)

- Introduction(5 pts) and Procedure Summary (5 pts)
(Point Range = 0 ~ 5 points each)
- Question (10 pts) = 5 Problems X 2 points
(Point Range = 0 ~ 10 points)

Part B. Attitude (20 points)

- Section: Attendance–Late Coming
- Penalty points: - 5 pts
- Explanations

When you arrive at the lab before TA calls your name, you get a full score, 5 pts. If you arrive 10 min late after the beginning of the lab, you get 3 pts. When you arrive between 10 min and 20 min, you will get the score, 0 pts. For being 20 minutes late, you can't participate in the lab experiment. (No chance any more.)



Section: Attendance– Absence without notice

Penalty points: -100 pts

Explanations

- If you are absent 2 times or more without any notices, F credit will be recorded.
- The lab experiment is ONLY permitted in registered class.
- Only valid excuses are illness (with a valid doctor's excuse) or unusual circumstance beyond your control (death in family), etc.
- The student must submit written verification of them for an excused absence.



Section: Lab Safety & Cleanup

Penalty points: -5 pts

Explanations

- **Personal Protective Equipment:** Safety glasses, Attire (lab coat) Wear approved eye protection at all times while in the laboratory. *The penalty is -5 pts for this*
- **Care of balance:** Anyone found to be leaving spilled chemicals in the balance area or bench will lose 5 pts for each violation. Any chemicals spilled on the bench top or the balance pan during transfer are to be cleaned up immediately by the student.
- **Cleanup of Lab Bench:** The students are responsible for cleaning up their immediate lab bench area before leaving lab. This means wiping up any spills and disposing of any paper towels from the bench top and sink. Failure to do this result in a deduction of -5 pts.
- **Disposal of chemicals:** **DO NOT** discard chemicals down the laboratory sink. *The penalty is -5 pts for this*

Section: Concentration & Comprehension

Penalty points: -5 pt

Explanations

Check lists

- playing with gossiping
- cell phone (touching, ringing, chatting), and so on
- Repeated failure of the same experiment

The penalty is -5 pts for each case.

Part C. Laboratory Report (60 Points)

Result & Discussion (50 pts)

Results

- 0 Data units
- 0 Graphs or Analysis
- 0 Calculations in a detail
- 0 Tables

Discussion (20~40 lines)

- 0 Summary
- 0 Assessing the results (Analysis)
- 0 Conclusions

Reference



Post-lab Questions: 10 pts = 5 Problems X 2 points
(point range: 0 ~ 10 pts)

Teaching assistant will choose and assign the number of problems out of *Laboratory Question* of each topic on the lab manual.

2) Online Safety Training Completion

2-1) Route: safety.kaist.ac.kr → Lab Safety Management System → Lab Safety Education → Online Education

2-2) Bachelor's requirement

classification	Hours required	Topics
Freshmen	-New user education for freshmen- 2 hours (within 3 months of admission) - Regular education: 6 hours~	-New user education: [New Education] - Regular education: Free choice of Chemical topics
Sophomore ~ Senior	Regular education: 6 hours ~	- Regular education: Free choice of Chemical topics

* **KS Lab** (A Laboratory subject to thorough safety inspection): General Chemistry Lab (E6-5)

Utilizing Web System




- Online WEBS

- Video & Q & A board

- klms.kaist.ac.kr*

- Assignment Submission:

- www.turnitin.com*

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- Your TA will let you know information (class ID and enrollment key) to register into your lab class on **Turnitin system** *via* announcement on the KIMS or *via* e-mail later. Based on the experimental data, student must submit a file including pre-lab assignment, lab report, and post-lab assignment through the Turnitin system in due date. You should use MS-word to produce your assignments.



Additional Information

- Assignment Submission and Feedback
- Guidelines to check Plagiarism Using the Turnitin Software
- Policy for Late Lab Report
- Counting Attendance in Online Lab Class

1. *Assignment Submission and Feedback*

- Online Submission: www.turnitin.com
 - Create a user profile. Enter Class ID and enrollment key (provided by TA).
 - Enter your name in Korean or English and email address.
- Submission Due: Within 7 days
- Posting Grade: Within 3 days from the due date
- Claim Period: Within 2 days after the period of grading and feedback

[*Example*]

Wed	Thu	Fri	Sat	Sun	Mon	Tue
	[Exp1]	Due: Within 7 days				
	Period for Grading and Feedback of the Assignment			Claim period		



2. Our Guidelines to check Plagiarism Using the Turnitin Software

Reports having similarity ranges from 24% to 100% or the following common sources will be regarded as plagiarism that results in zero for all reports involved (determined by chief TA and instructor).




Example 1. Text matching

- Overall Similarity index: Should not exceed 24% (24% and below gives the color code–Green, in Turnitin, indicating that it within the acceptable).
- Acceptable number of words in unbroken string (phrase or sentence): Should not exceed 15 words


The color of the report icon indicates the similarity score of the report, based on the amount of matching or similar text that was uncovered. The percentage range is 0% to 100%. The possible similarity ranges are:

- **Blue** - No matching text
- **Green** - One word to 24% matching text
- **Yellow** - 25-49% matching text
- **Orange** - 50-74% matching text
- **Red** - 75-100% matching text

TITLE	SIMILARITY
Submission	0% 
Submission	6% 
Submission	43% 
Submission	58% 
Submission	80% 



If you get an orange 52% similarity percentage, that means that 52% of your paper is exactly the same as other sources found by Turnitin. Even in case of 15% similarity, if the matching text is one continuous block of borrowed material (should not exceed 15 words), it will be considered as plagiarized text of significant concern.




Example 2. Cut/ Copy and Paste material from the Web, textbooks or online manual, data (lifting phrases, sentence and paragraphs of someone's work beyond an acceptable number of words)

Example 3. Copying the work of another student

3. Policy for late lab reports

You should submit your assignment by due date on Turnitin. You are entirely responsible for **both *upload of the assignment file within due date* and *confirmation of the successful upload*** to Turnitin. *Warning! We will not accept any excuses or compromise in case that you deduct any points below due to your late report submission. If you miss last chance, you don't need to submit it.*

- ✓ Within 24 hours (last chance): -20 points
- ✓ More than 24 hours: -100 points



**Good luck and
Best wishes for
an error-free and
accident-free term.**