

2020 FALL Semester

General Chemistry Lab I (CH102)
Exp.0. Orientation

Department of Chemistry

2020. 9.



**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
- General Chemistry Lab II
 - Number : CH104
 - 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.

Online Lab Class: Utilizing Web System



■ Online WEBS

– Video & Q & A board

klms.kaist.ac.kr

– Assignment Submission:

www.turnitin.com

- We will upload videos of each experiment that include experimental working and result conducted by TA **on the *KLMS system***.
- Your TA will let you know information (class ID and password) to register into your lab class on ***Turnitin system*** *via* announcement on the KLMS or *via* e-mail later. Based on the video and experimental data, student must submit an assignment 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.

Lab Schedule

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

1. Laboratory Experiment

CH102

Exp.0. Introduction, Schedule, and Method of Evaluation)

Exp.1. Atomic and Molecular Structure (Dry Lab 3)

Exp.2. Quantum Chemical Calculation: the Potential Energy Curve and the Orbitals of H_2^+

Exp.3. Synthesis of Potassium Alum (Exp 15)

Exp.4. A carbonate Analysis; Molar Volume of Carbon Dioxide (Exp 13)

Exp.5. Molar Mass of a Solid (Exp 14)

Exp.6. Thermodynamics of the Dissolution of Borax (Exp 26)

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

Exp.8. Potentiometric Analysis (Experiment 18)

Exp.9. Molar Solubility; Common-Ion Effect (Experiment 22)

Exp.10. Galvanic Cells, the Nernst Equation (Experiment 32)

CH104

- Exp.0. Introduction, Schedule, and Method of Evaluation
- Exp.1. Factors Affecting Reaction Rates (*Experiment 23*)
- Exp.2. A Rate Law and Activation Energy (*Experiment 24*)
- Exp.3. Natural and Synthetic Polymers: The Preparation of Nylon
- Exp.4. Aspirin Synthesis and Analysis I: IR Spectroscopy
(*Experiment 19*)
- Exp.5. Aspirin Synthesis and Analysis II: Proton NMR Spectroscopy
(*Experiment 19*)
- Exp.6. Paper Chromatography (*Experiment 21*)
- Exp.7. Transition Metal Complexes (*Experiment 36*)
- Exp.8. Spectrophotometric Metal in Analysis (*Experiment 35*)
- Exp.9. Enzyme Kinetics
- Exp.10. Hard Water Analysis (*Experiment 21*)

2. Time Table

Period	Experiment #					Notes
	Mon	Tue (CH104)	Wed	Thu (CH102)	Fri (CH102)	
8/31 ~ 9/4		[Exp0]		[Exp0]	[Exp0]	
9/7 ~ 9/11		[Exp1]		[Exp1]	[Exp1]	
9/14 ~ 9/18		[Exp2]		[Exp2]	[Exp2]	
9/21 ~ 9/25		[Exp3]		[Exp3]	[Exp3]	
9/28 ~ 10/2						
10/5 ~ 10/9		[Exp4]				
10/12 ~ 10/16				[Exp4]	[Exp4]	
10/19 ~ 10/23						

Period	Experiment #					Notes
	Mon	Tue (CH104)	Wed	Thu (CH102)	Fri (CH102)	
10/26 ~ 10/30		[Exp5]		[Exp5]	[Exp5]	
11/2 ~ 11/6		[Exp6]		[Exp6]	[Exp6]	
11/9 ~ 11/13		[Exp7]		[Exp7]	[Exp7]	
11/16 ~ 11/20		[Exp8]		[Exp8]	[Exp8]	
11/23 ~ 11/27		[Exp9]		[Exp9]	[Exp9]	
11/30 ~ 12/4		[Exp10]		[Exp10]	[Exp10]	
12/7 ~ 12/11						
12/14 ~ 12/18						

3. Laboratory Manual

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

You can purchase the lab manual at the bookstore of
main library (E9).

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

- ✓ S, U Grade, U (0 - 729 points out of 1000 pts, or more than 2 absences)
(Students that receive the grade ranging from 0 to 729 points out of 1000 points or miss more than 2 times will have U 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
10 Experiments X 100 points
= 1000 points in total

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

- Pre-Lab Assignment (40 points)
 - ✓ Introduction (Theory) Summary (10 points)
 - ✓ Procedure Summary (10 pts)
 - ✓ Question (20 pts)

- Lab Reports (40 points)
 - (a) Result
 - (b) Discussion
 - ✓ Summary
 - ✓ Assessing the results
 - ✓ Conclusions
 - (c) Reference

- Post Lab Assignment: Questions (20 pts)

Part A. Pre-lab Assignment (40 pts)

Introduction(10 pts) and Procedure Summary (10 pts)
(Point Range = 0 ~10 points each)

Question (20 pts) = 5 Problems X 4 points

Teaching assistant will let you know #s of the problems to be submitted out of *Pre-lab Assignment* of each topic on the lab manual. (Point Range = 0 ~20 points)

Part B. Laboratory Report (40 Points)

Report Template

Date	(if missing, - 3 pts)
Name	(if missing, - 3 pts)
Results	0 Data or Analysis 0 Calculations (with units) 0 Graphs 0 Tables
Discussion	0 Summary 0 Assessing the results (Analysis) 0 Conclusions
Reference	(if missing, - 3 pts)

We are planning to provide experimental videos and results as indirect experience in place of laboratory activity so that you can write up the lab report.

◆ Video with Explanations and Results
(mp4)

Both English Video and Korean Video

◆ Data Summary File (Excel)

Part C. Laboratory Questions (20 pts)

Questions: = 5 Problems X 4 points
(point range: 0 ~ 20 pts)

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

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 Password (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 Turnintin 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.*

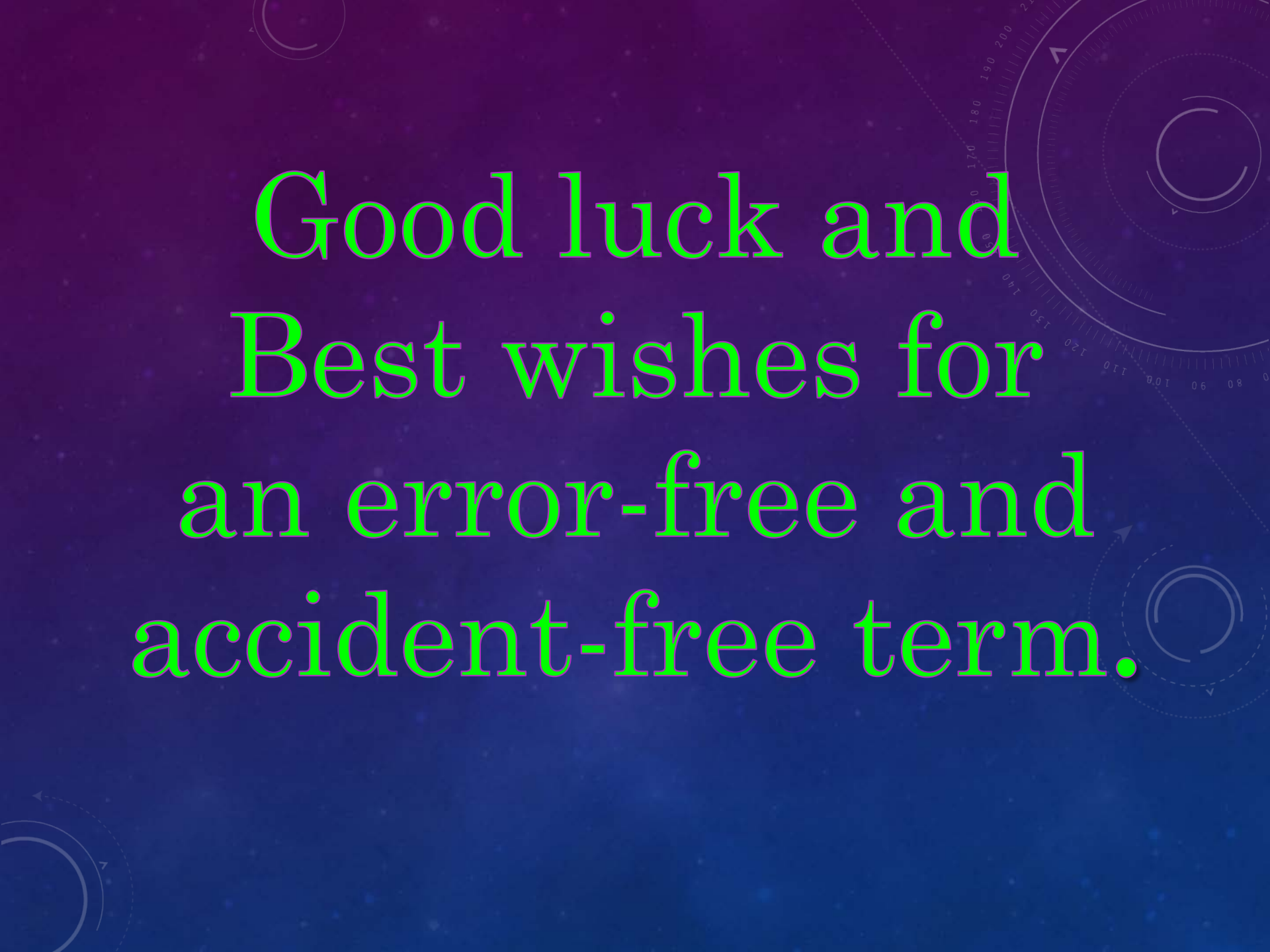
- ✓ Within 24 hours (last chance): -20 points
- ✓ More than 24 hours: -100 points

4. Counting Attendance

Students are required to complete **both of video watching and assignment submission** per one experiment. That is to say, to be counted for one attendance of online lab class, student must watch total running time of the laboratory videos uploaded on the KLMS and submit the assignment to the Turnitin per one experiment. For more than two absences out of **10 times (10 experiments)** per student, U grade will be given in this course.

The background features a blue gradient with faint technical diagrams, including a large circular scale with numerical markings (0, 80, 90, 100, 110, 120, 130, 140, 150, 160, 170, 180, 190, 200, 210) and various circular and dashed lines, suggesting a scientific or laboratory setting.

Safety Video in the Laboratory

The background features a dark blue gradient with a subtle pattern of white stars. Overlaid on this are several technical diagrams: a large circular gauge with numerical markings (0, 80, 90, 100, 110, 120, 130, 140, 150, 160, 170, 180, 190, 200, 210) and arrows, and several smaller circular diagrams with arrows indicating rotation or flow.

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