



CHEMISTRY 102L
General Chemistry Laboratory II (1.3; 1 cr.)
Course Syllabus
Spring 2017 - 18

INSTRUCTOR

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Office Hours: Tuesday: 2:00 - 3:00
 Thursday: 11:00 - 12:00
 Others: by appointment

LABORATORY LECTURES AND SESSIONS SCHEDULE

Laboratory Lecture	Laboratory Session	Section	Laboratory Room
Wednesday 12:00 Room: 101 Chem	Monday 1:00 – 4:00	1	107 Chem
		2	111 Chem
	Thursday 1:00 – 4:00	3	105 Chem

CATALOGUE COURSE DESCRIPTION:

A laboratory course to accompany CHEM 102. The experiments explore some of the fundamental concepts which deal with physical properties of solutions, chemical equilibrium, acids and bases, solubility equilibria, kinetics and electrochemistry. *Pre- or corequisite: CHEM 102; prerequisite: CHEM 101L. Every semester.*

REFERENCES AND RESOURCES

- **Moodle:** Moodle Course ID: CHEM 102L_hd00
The syllabus, handouts, basic lecture notes (PowerPoint presentations), assignments, report forms and other course-related materials, in addition to announcements pertaining to the course will be posted on Moodle.
- **Laboratory Manual:** posted on Moodle
- **Reference Textbook:** R. Chang, "Chemistry", 10th edition (2010), or 11th edition (2013), McGraw-Hill

COURSE OBJECTIVES

Chemistry is a science essential for the full understanding of the world we live in. This course aims:

1. To develop an understanding of some concepts necessary for this awareness.
2. To foster student's interest in chemistry as an experimentally based subject.
3. To introduce students to a range of laboratory skills and techniques including modern computer based techniques.
4. To explore, investigate, and apply some of the chemical principles and concepts in general chemistry.

LEARNING OUTCOMES

Upon completion of the course, students will be able to:

1. Apply basic laboratory skills and techniques carefully and accurately.
2. Handle chemicals properly with rigorous adherence to safety rules.
3. Use proper glassware and operate simple machines (balances, centrifuging machine, pH meter, spectrophotometer, voltmeter, etc...).
4. Conduct experiments that translate theoretical principles into practical applications. The experiments include: Conductivity, Colligative Properties, Chemical Equilibrium, Acids and Bases, Potentiometric Titrations, Solubility Product, Electrochemistry, and Kinetics.
5. Evaluate the steps, operations and results of an experimental procedure.
6. Write laboratory reports that present the relation between theoretical concepts and experimental data.
7. Evaluate the data and information available to present logical interpretations and reasonable conclusions.
8. Get valuable numerical results and reliable qualitative determinations from experimentally related exercises.
9. Explain some chemical phenomena and applications in real life in context of the learned chemical principles and the performed experiments.

COURSE CALENDAR

Date	Lab. Lecture	Lab. Session		Lecture / Experiment Topic
	Wednesday	Thursday	Monday	
Feb. 7 – 12	Feb. 7	Feb. 8	Feb. 12	Introduction and Safety Lecture Lab. session : Check- in
Feb. 14 - 19	Feb. 14	Feb. 15	Feb. 19	Conductivity of Strong and Weak Electrolytes Lecture and Experiment
Feb. 21 - 26	Feb. 21	Feb. 22	Feb. 26	Colligative Properties Lecture and Experiment
Feb. 28 – Mar. 5	Feb. 28	Mar. 1	Mar. 5	Chemical Equilibrium Lecture and Experiment
Mar. 7 - 12	March 7	Mar. 8	Mar. 12	Analysis of Vinegar and Antacids Lecture and Experiment
Mar. 14 - 19	Mar. 14	Mar. 15	Mar. 19	pH of Aqueous Solutions Lecture and Experiment
Mar. 21 - 26	Mar. 21	Mar. 22	Mar. 26	Potentiometric Titration Lecture and Experiment
Mar. 28 – Apr. 2	Mar. 28	Mar. 29	Apr. 2	<i>No Lecture and no Experiment Easter Holidays</i>
Apr. 4 - 9	Apr. 4	Apr. 5	Apr. 9	
Apr. 11 - 16	Apr. 11	Apr. 12	Apr. 16	Determination of the solubility Product Lecture and Experiment
Apr. 18 - 23	Apr. 18	Apr. 19	Apr. 23	Electrochemistry Lecture and Experiment
Apr. 25 - 30	Apr. 25	Apr. 26	Apr. 30	Chemical Kinetics Lecture and Experiment
May 2 - 7	May 2	May 3	May 7	<i>No lecture</i> Make-up and Check-out session
	May 9			Final Exam at 12:00

STUDENT ASSESSMENT

Student performance is assessed based on the following:

Pre – Laboratory Assignments	10 %
Reports	30 %
Drop Quizzes	15 %
Instructor’s Evaluation	10 %
Laboratory Final Exam	35 %

COURSE POLICY

The main guidelines that describe each of the laboratory work requirements and procedures are as follows:

Pre-Laboratory Assignments:

The pre-laboratory assignment for each experiment will be posted on moodle. Download and solve the assignment before the lab. session. Assignments must be submitted at the beginning of the lab. session. Zero grade will be given for late assignment.

Reports:

A report is required for each experiment. Every student should submit his/her own report, even in the case of group work.

The report forms are posted on moodle. Download the relevant report form, familiarize yourself with its content and get any needed theoretical values, if applicable, for the experiment. Enter the collected experimental data/observations directly in your report while performing the experiment, complete the report and submit it at the end of the lab. session.

Drop Quizzes:

A ten- minute drop quiz might be given at the beginning of the lab. session. The drop quiz questions are related to the assigned experiment.

Instructor’s Evaluation:

The Laboratory Instructor personal evaluation of the student’s work is based mainly on the student’s conduct, preparation, compliance with the safety rules and laboratory regulations, attitude, responsibility, techniques and skills development, in addition to proper communication and overall performance.

Attendance and Make-ups:

Students must attend all laboratory lectures and sessions. If **more** than **two** laboratory sessions are missed, students may be asked to withdraw.

A make-up for **one experiment** only is allowed. Students can make up a missed laboratory session only upon presenting a valid excuse (an official medical report from the university infirmary), otherwise, zero grade will be given for the missed work.

No Make-up drop quizzes will be given.

Laboratory Safety:

Students are required to carefully read and understand the safety rules mentioned in the Manual and those circulated by the Environmental Health, Safety, and Risk Management Center at AUB and abide by them.

They must strictly abide by the **dress code** mentioned (**long laboratory coat, closed shoes and no ballerinas, shorts, or skirts**), otherwise, they will not be allowed to perform the experiment or to make it up later.

Violation of the mentioned rules and regulations will result in expulsion from the lab. and a grade of zero.

Laboratory Work Requirements:

During each laboratory session, students are required to:

- Have their laboratory manual, the cabinet key and a calculator.
- Have their detergent, sponge, towel, and matches/lighter.
- Wear a white gown and safety goggles.
- Abide strictly by the safety rules and laboratory regulations as set forth in the manual.
- Come prepared to the lab. Read and understand the experiment, prepare an outline of the procedure to be followed, and answer the questions of the pre-lab assignment.
- Clean everything after finishing the experiment (used equipment, glassware, benches and sinks, etc.)

UNIVERSITY POLICIES

Academic Integrity:

Please refer to AUB Student Code of Conduct:

<http://www.aub.edu.lb/pnp/generaluniversitypolicies/Documents/StudentCodeConduct/StudentCodeConduct.pdf>, in particular section 1.1, which concerns academic misconduct including cheating, plagiarism, in-class disruption, and dishonesty. Please be aware that misconduct is vigorously prosecuted and that AUB has a zero tolerance policy. Course policy is that **credible evidence of cheating will result in course failure.**

Recommended Accessibility Statement to Acknowledge the Unique Learning Needs of Students with Disabilities:

AUB strives to make learning experiences as accessible as possible. If you anticipate or experience academic barriers due to a disability (including mental health, chronic or temporary medical conditions), please inform me immediately so that we can privately discuss options. In order to help establish reasonable accommodations and facilitate a smooth accommodations process, you are encouraged to contact the Accessible Education Office: accessibility@aub.edu.lb; +961-1-350000, x3246; West Hall, 314.

Non-Discrimination:

AUB is committed to facilitating a campus free of all forms of discrimination including sex/gender-based harassment prohibited by Title IX. The University's non-discrimination policy applies to, and protects, all students, faculty, and staff. If you think you have experienced discrimination or harassment, including sexual misconduct, we encourage you to tell someone promptly. If you speak to a faculty or staff member about an issue such as harassment, sexual violence, or discrimination, the information will be kept as private as possible, however, faculty and designated staff are required to bring it to the attention of the University's Title IX Coordinator. Faculty can refer you to fully confidential resources, and you can find information and contacts at www.aub.edu.lb/titleix . To report an incident, contact the University's Title IX Coordinator Trudi Hodges at 01-350000 ext. 2514, or titleix@aub.edu.lb . An anonymous report may be submitted online via EthicsPoint at www.aub.ethicspoint.com.

If you are pregnant or planning to be pregnant, you should consult with your healthcare provider so you become fully informed of the potential risks and understand the precautions that you should take.