

Syllabus – General Chemistry B **CHEM 102-006**

The purpose of this syllabus is to describe the course, resources, and policies. It is meant help all students understand the expectations and requirements for the course, and it should be used as a reference for questions about policies. When updates to the syllabus are made during the term, a new version will be posted electronically, and all students will be notified.

Course Information

Course: Chemistry 102 – General Chemistry B (3 credits: Lecture & Discussion)

Prerequisites: Chem 101 and Math 118 with a grade of C- or better, or the equivalent.

A student missing a prerequisite may be withdrawn at any time.

Time Zone: This syllabus lists dates/times using Chicago local time (U.S. Central Time Zone)

Lecture & Discussion: MoWeFr 8:20AM - 11:10AM (Asynchronous with requisite Zoom Days)

Section Instructor: Dr. Angela Mahaffey

Instructor Contact Information

Office: BVM 911

Email: amahaf1@luc.edu

Email timing: Mon – Fri (8a – 8p)

Office Hours Policy: Contact for details

Office Hours Schedule: By appointment

Required Course Materials

- Textbook: Chemistry The Central Science, Brown et. al., 14th edition; eText or hard copy
Mastering Chemistry COURSE CODE: mahaffey50403
- Loyola email, Sakai (and integrated tools), Zoom, Gradescope & additional software & online resources.
- Scientific Calculator (non-programmable, non-graphing, and independent of another device such as a phone or tablet)
- Additional web-based systems may be used for uploading your work and facilitating feedback and evaluation. Registration will be free but required. These may include [Gradescope](#) and other sites.

Recommended Course Materials: e.g., Molecular Model Kit, Solutions Manual, etc. (as applicable)

Copyright/Intellectual Property reminder: Course materials provided by your instructors at Loyola, including my materials, may not be shared outside any course without the instructor's **written permission**. Content posted without permission will be in violation of Copyright/Intellectual Property laws.

Course Content & Learning Outcomes

Prerequisite knowledge from Chemistry 101 is necessary for in-depth study of topics in Chemistry 102. We will focus on applying a conceptual understanding of fundamental chemical principles. You will continue to learn the language of chemistry and develop your skills in scientific problem solving and critical thinking. This will serve as a foundation for further study in chemistry, other sciences and related disciplines.

The material is highly cumulative over two semesters, such that you will be able to do the following:

- Use multiple perspectives of matter (macroscopic, particle, symbolic levels) to qualitatively describe and explain characteristics, properties, and relationships of the following: liquids and solids, solutions, reaction kinetics, equilibria, acids and bases, reaction thermodynamics, electrochemical reactions.
- Quantify relationships between variables controlling chemical systems.
- Solve quantitative multistep problems combining multiple concepts within the systems.
- Differentiate among closely related factors, categorize problem types, and select appropriate tools to solve problems.
- Apply chemical principles to explain natural phenomena.

Summer Session Tutoring information

The Tutoring Center is excited to offer Peer Tutoring to help students reach their academic goals this summer! Summer A services start Monday, July 3, 2023.

- How do I access peer tutoring? There are 2 ways!
 - 1) We offer drop-in tutoring hours via Zoom. Go to our online schedule at, luc.edu/tutoring, and click on the "Tutoring Session Schedule" in the top right corner. Select your course's Zoom link during the date/time of the tutoring session. That's it!
 - 2) In addition, you can schedule 1-hour appointments on Navigate if you wish to ensure a set block of time is spent on the course content. Your tutor will send you a Zoom link within an hour of the appointment time. Appointments can range from 1-8 students depending who signs-up and need to be made at least 12 hours in advance. If you miss more than two appointments without letting your tutor/Tutoring Center staff know in advance, tutoring privileges may be revoked.
- How do I prepare for a tutoring session?

Bring your notes, textbook, and questions for your tutor. Be prepared that your tutor is not going to do the work for you (that would be cheating!) but they will help you get to the answer!

Class Attendance & Course Coverage

You will have the chance to introduce yourself to multiple classmates early in the course. Our actual pace may vary from this schedule: if you miss a class for any reason, it is your responsibility to work through the content, and I also suggest you contact a classmate for further discussion of the topics as you are still responsible for all material covered and assigned. An outline will be shown at the beginning of each class, but I do not have published lecture notes. Lectures will be presented using some pre-recorded content to be viewed on Panopto (via Sakai). Slides/handouts/links/animations and other additional resources will be shared on Sakai. We are covering the course topics in a more traditional (structure-first) order compared to how topics are listed in your textbook.

Student and Faculty Expectations

I expect you to take ownership of your learning and to use office and SI sessions as learning resources to help you reach your desired level of achievement in the course. For this course, it is anticipated that the average independent working time (outside of class) required to learn the material in order to achieve a minimal passing grade of C- is 1-2 hours per day, every day, but your needs will also vary depending on your prior knowledge and ability to master cumulative concepts in the course material as the semester progresses. What can you expect of me? My primary objectives are to provide you with the tools, environment, encouragement, and support to learn Chemistry. Because the course objectives are based on what students will learn, my teaching techniques include the use of pre-lecture homework, active learning and metacognition, to help you maximize your learning. I expect that all of us will work together!

Student Accommodations

Loyola University provides reasonable accommodations for students with disabilities. Any student requesting accommodations related to a disability or other condition is required to register with Student Accessibility Center (SAC), located in Sullivan Center, Suite 117. Professors receive the accommodation notification from SAC via Accommodate. Students are encouraged to meet with their professor individually in order to discuss their accommodations. All information will remain confidential. Please note that in this class, software may be used to record class lectures in order to provide equal access to students with disabilities. Students approved for this accommodation use recordings for their personal study only and recordings may not be shared with other people or used in any way against the faculty member, other lecturers, or students whose classroom comments are recorded as part of the class activity. Recordings are deleted at the end of the semester. For more information about registering with SAC or questions about accommodations, please contact SAC at 773-508-3700 or SAC@luc.edu.

Course Repeat Rule

Students are allowed only THREE attempts to pass a particular chemistry course with a C- or better grade. The three attempts include withdrawals (W). The Department advises to complete a course with a grade of C or C-, and to demonstrate growth in future coursework, rather than to withdraw from a course.

After the second attempt, the student must secure approval for a third attempt. Students must come to the Chemistry Department, fill out a permission to register form or print it from the Department of Chemistry & Biochemistry website: <https://www.luc.edu/chemistry/forms/> and personally meet and obtain a signature from either the Undergraduate Program Director, Assistant Chairperson, or Chairperson in Chemistry. A copy of this form is then taken to your Academic Advisor in Sullivan to secure final permission for the attempt.

Course Coordinator: Dr. Sandra Helquist (shelquist@luc.edu)

Chemistry 102 is a multi-section lecture & discussion course with common content and common outcomes across all sections. The Course Coordinator is responsible for consultation and coordination with instructors regarding policies, exam writing, and grading. **Your Section Instructor is responsible for communicating with you regarding all course content and policies and is the first and primary person you should contact with questions about all aspects of the course.** As needed, all Section Instructors will consult with the Course Coordinator throughout the term.

Academic Integrity

All students in this course are expected to have read and to abide by the demanding standard of personal honesty, drafted by the College of Arts & Sciences, which can be viewed at:

<https://www.luc.edu/cas/advising/academicintegritystatement/>

A basic mission of a university is to search for and to communicate the truth as it is honestly perceived. A genuine learning community cannot exist unless this demanding standard is a fundamental tenet of the intellectual life of the community. Students of Loyola University Chicago are expected to know, to respect, and to practice this standard of personal honesty. Academic dishonesty can take several forms, including, but not limited to cheating, plagiarism, copying another student's work, and submitting false documents.

Any instance of dishonesty (including those detailed on the website provided above or in this syllabus) will be reported to The Chair of The Department of Chemistry & Biochemistry who will decide what the next steps may be. Evidence of cheating in this course will result in, at a minimum, a score of zero (which cannot be dropped from grade calculations) and penalty up to failure of the course. College policies include that instructors will report incidents of academic misconduct to their chairperson as well as to the Assistant Dean for Student Academic Affairs in the CAS Dean's Office. I will report incidents to the Chemistry & Biochemistry Department for further action(s).

Loyola University Absence Policy for Students in Co-Curricular Activities (including ROTC):

Students missing classes while representing Loyola University Chicago in an official capacity (e.g., intercollegiate athletics, debate team, model government organization) shall be allowed by the faculty member of record to make up any assignments and to receive notes or other written information distributed in the missed classes.

Students should discuss with faculty the potential consequences of missing lectures and the ways in which they can be remedied. Students must provide their instructors with proper documentation i.e., "[Athletic Competition & Travel Letter](#)" describing the reason for and date of the absence. This documentation must be signed by an appropriate faculty or staff member and it must be provided to the professor in the first week of a semester. It is the responsibility of the student to make up any assignments. If the student misses an examination, the instructor is required to allow the student to take the examination at another time. (<https://www.luc.edu/athleteadvising/attendance.shtml>)

Students who will miss class for an academic competition or conference must provide proper documentation to their instructor as early in the term as possible.

Accommodations for Religious Reasons

If you have observances of religious holidays that will cause you to miss class or otherwise effect your performance in the class you must alert the instructor **within 4 calendar days of the first class meeting of the term** to request special accommodations, which will be handled on a case by case basis.

Other Items

- A link to the official Loyola calendar can be found here: <https://www.luc.edu/academics/schedules/>
- The Withdraw deadline for the term is on Friday, August 4, 2023.
- Loyola is using SmartEvals to provide instructor & course feedback. OIE will send emails near the end of the term.

Class Recording & Content Information

In general lecture, class sessions may be recorded. The following is a mandatory statement for all courses in the College of Arts & Sciences (CAS). We will discuss class norms and standards during the first week and continue the discussion as needed throughout the semester.

Privacy Statement

Assuring privacy among faculty and students engaged in online and face-to-face instructional activities helps promote open and robust conversations and mitigates concerns that comments made within the context of the class will be shared beyond the classroom. As such, recordings of instructional activities occurring in online or face-to-face classes may be used solely for internal class purposes by the faculty member and students registered for the course, and only during the period in which the course is offered. Students will be informed of such recordings by a statement in the syllabus for the course in which they will be recorded. Instructors who wish to make subsequent use of recordings that include student activity may do so only with informed written consent of the students involved or if all student activity is removed from the recording. Recordings including student activity that have been initiated by the instructor may be retained by the instructor only for individual use.

Additional Content, Copyright & Intellectual Property Statement

By default, students may not share any course content outside the class without the informed written consent of the owner of that content. This includes any additional recordings posted by students, materials provided by the instructor, and publisher-provided materials. For example, lectures, quiz/exam questions, book figures/slides, and videos may not be shared online outside the class. In some cases, copyright/IP violations may overlap with breaches of academic integrity. Remember that obtaining consent to share materials is an active process.

Pass/Fail Conversion Deadlines and Audit Policy

A student may request to convert a course into or out of the "Pass/No-Pass" or "Audit" status only within the first two weeks of the semester. For the Summer 2023 Session B, students are able to convert a class to "Pass/No-Pass" or "Audit" through Monday, July 10th. Students must submit a request for Pass/No-Pass or Audit to their Academic Advisor.

Health, Safety, and Well-Being On-Campus

Please be familiar with and adhere to all policies and protocols posted on the *Campus Info & Resources* site:

<https://www.luc.edu/healthsafetyandwellbeing/campusinforesources/>

Final Exam

The final exam for the course is given on the last day of the Summer Session B term: Friday August 11th. You will have exactly 2 hours to complete the exam. Additional time will not be granted, even if you start late. There will be no make-up final exams given under any circumstance, and the exam will not be given early, either. Components of the cumulative and comprehensive CHEM 102 final exam will be common across all course sections by consultation among all Section Instructors and the Course Coordinator.

Universal Absence Accommodation Policy

The purpose of a universal absence accommodation policy is to account for emergency circumstances (e.g., serious illness, caring for a family member, car accident) that require you to be absent from class, while maintaining fairness in grading for students who attend and complete all in-class graded assignments. We believe that class attendance and participation are essential for your success in this class, and that your health is important to us and our shared community. Please use good judgement and stay home if necessary/prudent for your circumstances.

This is the universal accommodation policy for in-class graded assignments:

- **A missed in-class exam due to absence for any reason is already accommodated in the course grading system. Given that only the higher scores for term exams are included in this calculation, a missed exam would be the one not included in this calculation, as it would be the lowest score (0%) of the exams.**

You may provide medical documentation for an absence, but it is not required.

These accommodations are automatically available to all students.

Course Grading System

The standards for each letter grade are listed here according to all required course components. Each student will receive a midterm grade via LOCUS prior to the Withdraw deadline for the term. Grades are only based on the criteria listed in the syllabus: no substitutions, and no additions.

Grading Scheme

HW (Highest 7 of 10)	15%
Participation Sheets	10% (Submit via Sakai Assignments as pdf ONLY)
Exams	75%* (please see description below for additional breakdown)
Total score	100%

*the final exam is mandatory to earn a passing grade

To reward improvement and to accommodate an exam absence, your Exams contribution to your course grade will be automatically calculated to drop your lowest midterm score:

Average of highest two midterms	40%
Final Exam	35%*
Exams contribution	75%

The final exam is **mandatory**: a student who does not take the final will not pass the course.

EXAM DATES:

On the First Day of class exam protocols will be discussed. Please follow the examination protocols. I am available for questions.

EXAM 1: 7/14 - Friday

EXAM 2: 7/28 - Friday

EXAM 3: 8/4 - Friday

FINAL EXAM: 8/11 - Friday

Letter Grade Cutoffs:

Grade	Percentage
A	92.0-100
A-	88.0-91.9
B+	84.0-87.9
B	80.0-83.9
B-	76.0-79.9
C+	72.0-75.9
C	68.0-71.9
C-	64.0-67.9
D	52.0-63.9
F	0-51.9

These grade cutoffs are firm at the end of the term. **No rounding or extra credit will be considered.** Grades are only based on the criteria listed in the syllabus: no substitutions, and no additions.

Changes to Syllabus

There may be changes to the syllabus during the semester. ***You are responsible for all syllabus changes made in class whether or not you attend. These updates will also be shared on the Sakai course page.***

Course Topics

We will not cover every topic in every chapter of the textbook this semester, but the material will usually come from the Chapters listed below. Focus first on the material that is directly covered in classes and assigned or recommended. Explore the additional material in the textbook for your own interest and enrichment.

Chapter 11: Liquids and Intermolecular Forces
Chapter 12: Solids and Modern Materials
Chapter 13: Properties of Solutions
Chapter 14: Chemical Kinetics
Chapter 15: Chemical Equilibrium
Chapter 16: Acid-Base Equilibria
Chapter 17: Additional Aspects of Aqueous Equilibria
Chapter 19: Chemical Thermodynamics
Chapter 20: Electrochemistry
Chapter 21: Nuclear Chemistry

Initial Schedule (NEXT PAGE)

WEEK 1	July 3,5,7	Chapter 11: Liquids and Intermolecular Forces Chapter 12: Solids and Modern Materials <i>*Sakai Practice Sheets (P.S.) #1-2 (Due Monday, July 10 - 1155p)</i> *M.C. Homework (Chps. 11-12) <i>(*All HW due 8/10 by 1159pm.)</i>
WEEK 2	July 10,12,14	Chapter 13: Properties of Solutions Chapter 14: Chemical Kinetics <i>*Sakai P.S. #3-4 (Due Friday, July 14 - 1155p)</i> *M.C. Homework (Chps. 13-14) EXAM #1 (M.C.) AVAILABLE FIRST 1.5 hrs of class (7/14, FRIDAY): Chapters 11-14
WEEK 3	July 17,19,21	Chapter 15: Chemical Equilibrium Chapter 16: Acid-Base Equilibria <i>*Sakai P.S. #5-6 (Due Friday, July 21 - 1155p)</i> *M.C. Homework (Chps. 15-16)
WEEK 4	July 24,26,28	Chapter 17: Additional Aspects of Aqueous Equilibria Chapter 19: Chemical Thermodynamics <i>*Sakai P.S. #7-8 (Due Friday, July 28 - 1155p)</i> *M.C. Homework (Chps. 17 and 19) EXAM #2 (M.C.) AVAILABLE FIRST 1.5 hrs of class (7/28, FRIDAY): Chapters 15-17
WEEK 5	July 31 August 2,4	Chapter 20: Electrochemistry Chapter 21: Nuclear Chemistry <i>*Sakai P.S. #9-10 (Due Friday, August 4 - 1155p)</i> *M.C. Homework (Chps. 20-21) EXAM #3 (M.C.) AVAILABLE FIRST 1.5 hrs of class (8/4, FRIDAY): Chapters 19-21
WEEK 6	August 7,9,11	REVIEW *DEADLINE for All M.C. HW Assignments - 8/10 by 1159pm FINAL (M.C.): 8/11 FRIDAY – CUMULATIVE (Chapters 11 - 17, 19-21)

Smart Evaluation (Eval) Objectives:

At the end of the Summer Session II semester, you will receive an email with a link for the electronic course evaluation noting the Smart Eval objectives for this course.

It is in the best interest of the student to:

- Take “good” (useful) Lecture Notes.
- Read/Review course material prior to lectures and exams.
- Complete Discussion worksheets by due date – **NO EXCEPTIONS.**
- Meet during Office Hours if more explanation of lecture/exam/ discussion materials is needed.
- Complete Mastering Chemistry (online) Homework Assignments.
- Review Key Equations and Terms (suggestion: create personal study guides).