



Chemistry 111, General Chemistry Laboratory A Summer 2022 Syllabus

Summer Session A (6-weeks): May 23rd – July 1st, 2022

Chem 111-001 (1 credit hour course), Meets Tuesdays AND Thursdays 1:30 – 4:15pm.

Lab Location: Flanner Hall 308

Prerequisite: Math Placement Test or Math 117

Laboratory Coordinator: Dr. Katrina Binaku

Office Hours in person (@ my office): Tuesdays & Thursdays 4:25 - 5:00pm

Office Hours in ZOOM: [Wednesdays 9-9:45am and again at 11:30am-12pm](#)

Office Location: 104 Flanner Hall

Office Phone: 773-508-8715

Email: kbinaku@luc.edu

A Teaching Assistant (TA) will be assisting the laboratory coordinator during this course and will also hold an office hour for assisting students. TA information is listed in Sakai.

Course Meeting Times: This course is in-person laboratory. There are no online substitutions for in-person laboratory work. Attendance is mandatory. There are no excused absences; do not plan work or vacations or other things during scheduled class times. There are limited to no opportunities to make up laboratory experiments if missed due to absences; that is because of the accelerated nature of this course. If absence is due to a claim of contracting COVID-19, the lab coordinator will ask to see proof of a positive test. IF any makeup time is offered for missing an experiment, it is done on the lab coordinator's terms and lab coordinator's schedule/availability.

Summer courses are optional; registering for a summer course means students are aware of the high expectations. This course fits an entire semester of laboratory content in to 6-weeks. It is the student's responsibility to pay attention to all information regarding the course, including the course schedule which is at the end of this syllabus. As a student enrolled in the course, you agree to be 100% committed and follow and complete all course aspects including requirements, experiments, lab report & peer review, assignments, homework, quizzes/exams, abide by due dates, rules, etc. set forth in this syllabus and displayed in Sakai. This course requires your full commitment so make sure you can commit 3-4 hours per week to complete the course homework activities outside of the scheduled lab time. All times listed are Central Standard Time (CST); all due dates are in CST.

Academic Calendar: It is the student's responsibility to know the schedule for this course and also the official [University Academic Calendar](#) of important dates.

Welcome to Chem 111. We look forward to having you in the course. Read the entire syllabus.

Email and ZOOM Etiquette: When sending emails please put Chem 111-001 in the subject line or there will be a delay in response time. Dr. Binaku and TA must know which course a student is in before replying to email. (Dr. Binaku is teaching two different summer courses). Weekday emails will get a response within a couple of hours. Emails after 6pm may not be replied to until the next morning at 8am. Dr. Binaku checks email on weekends; response times are longer [12-24hrs]. Requests to ZOOM on evenings or weekends will not be granted.

COURSE DESCRIPTION

This lab course emphasizes introductory application of topics/theory covered in the lecture course (Chem 101). It introduces students to basic chemical laboratory skills & techniques including lab & chemical safety, glassware & lab equipment, significant figures, basic statistics, writing a formal lab report, graphing data, accuracy & precision, atomic structure, periodic table trends, solution preparation, stoichiometry, titration, pH measurements, acid/base indicators, and spectrophotometry. This list is not exhaustive but mentions the highlights.

Goals of course: 1) demonstrate lab safety, 2) deliver knowledge of basic laboratory skills including appropriate glassware and equipment use for experiments, 3) connect lecture theory topics to practical laboratory experiences, and 4)) introduce scientific writing via a formal lab report and lab notebooks.

Outcomes: 1) students demonstrate safe lab practices, 2) students identify & use appropriate glassware for experiment measurements, 3) students compute calculations and analysis questions coupled to each lab experiment, and 4) students demonstrate proper documentation of lab experiments in lab notebooks and explain laboratory results in formal lab reports.

ROLE OF TEACHING ASSISTANTS

In each lab session, your primary interaction could be with a Teaching Assistant (TA). The function of a TA is to help you safely get good data and provide individual help when necessary. TAs will not do the course work for you. The role of the Laboratory Coordinator is more behind the scenes: plan the curriculum, prepare handouts & PowerPoints, and train TAs so the lab experience is educational, fair, and effectively run for students. The Laboratory Coordinator will be in lab too, but may step outside of the lab from time to time to handle appropriate curriculum work. Utilize both the Lab Coordinator and TA for help. The Laboratory Coordinator is available during and outside of lab hours if there are any questions/concerns that TAs cannot handle. The Laboratory Coordinator has final authority in all course related matters.

TA responsibilities include but are not limited to holding an office hour, grading, and answering student questions. Lab Coordinator and TA are in constant communication and “CC” each other on email replies to students. This mitigates a student emailing both the Lab Coordinator and TA with the same questions; one reply is given and is the same answer whether from Lab Coordinator or TA. TAs help students develop critical thinking and problem-solving skills. Students can always email the Lab Coordinator; TA can help answer questions too and can be emailed as well. *If at any point you want to talk to the Lab Coordinator regarding the TA, please do. TA should enhance the educational experience. If this is not the case, I want to know.

REQUIRED ITEMS

- 1) Chem 111 Laboratory Packet (provided for free as PDF in Sakai). Printed manuals stored in the lab are provided. Do print out a personal copy of the manual if you prefer.
- 2) Chem 111 Labster Lab Manual (provided for free as PDF in Sakai). Simulation exercises are done online, so this manual is not printed for you. Do print a personal copy if you want to. Printed copies will not be provided to students.
- 3) Labster – web-based virtual lab experiment simulations to learn some lab techniques. Access to Labster will be provided in Sakai for free to students!
- 4) Composition style notebook (not spiral bound & cannot have tear-out perforations). Line ruled. Students must purchase.
- 5) A non-erasable pen is required for all written work. No white-out is allowed. No pencils allowed. Students must purchase.
- 6) Safety goggles (we provide to you for free on day #1). These must be type G, H or K goggles and must meet or exceed ANSI Z87.1 requirements. Safety glasses do not meet our requirements and are not allowed.
- 7) A face mask. See Summer 2022 Masking Requirement below. Students must have one.
- 8) Long-sleeve Laboratory Coat (white is preferred coat color). Students must purchase.
- 9) Appropriate clothing and footwear. See below for details*
- 10) Scientific calculator. Students must purchase. Cell phones are not calculators.
- 11) [Sakai access](#) via the internet to review/complete course content [watch Panoptos, complete simulation work, take quizzes, upload notebook pages, and other], view resources, review grades, and complete all Sakai assigned course work.
- 12) Desktop or Laptop computer with internet access. Labster does NOT work on tablets nor mobile devices; Sakai does not display well on those devices. If you do not have a computer, the Information Commons (IC) on campus has plenty of available computer stations to do work at. You may also read about the [extended loan equipment program](#) within the first week of class to arrange a resource. Lab Coordinator is not responsible for coordinating resources for students nor responsible for a loaned device. Many course work items require a computer to access and complete them.
- 13) Microsoft 365 (free for LUC students) to write a formal lab report. Information is supplied on [how to download & access Microsoft 365 for free](#).
- 14) Panopto (free for LUC students). One format of recorded course content is Panopto video. You may be prompted to log in with UVID username and password to view the videos. Links to videos will be provided in Sakai (Panopto tool) and via email.
- 15) Cam Scanner app OR a scanner machine. Cam scanner is a free app that converts a phone picture to a PDF file. You must take pictures of Composition lab notebook pages and convert them to a PDF file to submit the notebook pages to Sakai for grading. This app works on android and iPhone. OR a scanner machine can be used.
- 16) Periodic table. Here is a cool one provided by the [Museum of Science & Industry](#).

***Appropriate clothing must be worn that minimizes potential chemical contact with your skin. Shoes that adequately cover the entire foot are required. Sandals, open-toe shoes, perforated shoes, open-backed shoes are not acceptable. No skin can be exposed on your feet or legs. Clothing that covers and protects body from the waist down (including your ankles) must be worn. Lab coat required, which covers the midsection and upper body.**

SUMMER 2022 MASKING REQUIREMENT

It is Departmental policy that, even in the event the University relaxes its universal requirement for indoor mask-wearing during summer session(s), it will remain a principle of this class-section that, out of respect for the health of housemates and others in regular contact with members of our community, in this class we properly wear masks at all times (e.g. over nose and mouth).

GENERAL POLICIES

- Attendance is mandatory. All in lab work, written & Sakai work, as well as TA observations, serves as the basis for earning points and showing progress. Written work will be graded with an emphasis on correct significant digits, consistent results (do data & observations match conclusions), appropriateness/correctness of analysis, and thoroughness in responses. Following directions of reporting calculated answers are taken into account in grades too.
- Acting in a safe manner, wearing proper clothing and PPE, respecting chemicals, glassware, and equipment is required. Watching assigned Panopto videos BEFORE coming to lab is essential for knowledge of the experiments. Knowledge = safety. If Panopto experiment videos are not watched at least to 90% completion [do not fast forward as I will know], student will not be allowed to complete an experiment and that is a 0. Unpreparedness can lead to endangering oneself or others in the laboratory.
- All hand-written course work must be completed in non-erasable pen. Work not completed in pen or containing “white-out” is subject to point deduction(s) and is not eligible for any regrade requests.
- The Composition notebook must contain all lab experiment information [name, date, title, introduction, safety, data/observations/calculations, and conclusions]. This is the major component of your course grade. Losing this Composition notebook may result in failure of the course, as one cannot be graded on work that does not exist if the notebook is lost. Follow the guidelines given on how to appropriately set-up a laboratory notebook.
- Aspects of lab work must be done in the Composition notebook only. (No loose-leaf paper or other notebooks). Your TA will evaluate/grade your notebook. This functions as a way for TAs to grade along the way and to make sure you are on the right track with lab results. If there are any discrepancies in recorded grades, proof of having earned a specific grade on a particular lab is the presence of that graded work in your notebook.
- Each student is assigned a drawer with glassware and equipment. At the beginning & end of the course, the drawer contents is checked for completeness. The drawer is shared with other students over the course of a week. Therefore, it is essential that you clean the equipment used after an experiment is done. Drawers may be checked sporadically. If glassware is broken, the student is responsible for requesting a replacement item; there is no penalty for broken glassware.
- Homework can never be submitted via email. No exceptions. Sakai is the only avenue.
- In general, Sakai work cannot be made up. Late work is not accepted for quizzes. Late lab notebooks, lab report, and Labsters may be accepted (**See Late Policies section**).
- Safety and Clean-up points will be earned on the basis of safe/professional conduct in the lab. A safe lab environment is essential. Unsafe actions will definitely result in grade degradation.
- The following is a partial list of ways you can lose safety/clean-up points:

- Coming late to class, after the pre-lab lecture has started will result in deduction of safety points.
- Not dressing appropriately for lab. Proper footwear/clothing are required.
- Not bringing goggles to lab/not wearing your goggles consistently in lab can result in expulsion from the lab. Safety glasses do not meet our safety requirements.
- Not properly wearing a face mask.
- Not bringing lab coat to lab. Not wearing lab coat properly [buttoned] during lab.
- Not keeping your equipment drawer or lab space in good condition (i.e. dirty glassware/bench).
- Engaging in horseplay/actions that may endanger you, your classmates, TA, or Lab Coordinator.
- Not adhering to Disposal Instructions indicated in each lab handout.
- The lab-pro equipment used is breakable and requires special care. You and your partner will be assigned a box to use, and if the equipment is found to have been handled negligently, points will be deducted from both your safety points and your lab score for the both of you.
- If you are not wearing proper clothing or footwear, you will be asked to leave the laboratory and a make-up lab time may NOT be offered, as the syllabus and welcome emails specifically state the clothing/shoe requirements. Be aware!

An action, even if not herein, that is deemed unsafe by TA or Lab Coordinator will result in safety point deductions. **Failure to adhere to lab safety rules can result in expulsion from the lab session and/or course with no opportunity for make-up of the work. Safety must be taken very seriously.**

ATTENDANCE/PARTICIPATION

Attendance is mandatory. You are required to come to class on your assigned “in-person days” and can only attend the lab section in which you are officially enrolled in LOCUS. There is a point value associated with the work accomplished in each class, and you cannot earn points for classes that you do not attend. **There are limited opportunities to make up missed labs!** A student may attend class during the asynchronous week to complete the make up in most instances. There are six lab experiments and students are expected to complete all of them. If a student is absent for both the lab and make up lab, a zero (0) is recorded in the gradebook for the experimental work missed. Sample data is given so the student can complete the homework questions [such as a quiz] pertaining to the lab missed.

If the university is open, you are expected to attend class and be on time. Points are deducted for those who arrive late. If you arrive after the conclusion of the pre-lab lecture, you will not be allowed to perform the lab. Being sent home for improper clothing/footwear also counts as an absence and no makeup work is allowed.

Any days’ activities listed as asynchronous are off-campus sessions designed as time set aside for the student to learn content in Panopto lectures, videos, and lab simulations or other in place of meeting in person. All course work has specific due dates that will not be adjusted.

Labster gives students practice for some laboratory protocols [before coming to lab to complete a similar technique] and the ability to experience a variety of experiments in a virtual space. All course work is one attempt only, except for the Labsters which are unlimited attempts. Labsters can be completed an unlimited number of attempts to earn the ‘best’ grade; Labster are NOT a replacement for in-person laboratory experiments. They are a teaching tool to enhance learning.

Review the schedule at the end of the syllabus and consider the negative impact that missing a hands-on laboratory session will have on your educational experience. Students should not enroll in this summer lab course if that they cannot fully attend 100% on the days and times listed in LOCUS. Missing 2 of the in-person lab experiments, which is nearly 33% of the lab work, is significant and unacceptable and will result in academic failure. Course failure also results if the formal lab report is not turned in.

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 (develop standard form on web) 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 as far in advance of the absence as possible. It is the responsibility of the student to make up any assignments. [Policy for athlete attendance.](#) Students participating in co-curricular activities must make information concerning time conflicts with University sponsored events available to the Laboratory Coordinator within the first week of the course. The Laboratory Coordinator reserves the right to contact the Athletics Department confirming time conflicts and regarding concerns. Students missing classes while representing Loyola University Chicago in an official capacity (e.g. intercollegiate athletics, debate team, model government organization) will need to discuss their needs with the Laboratory Coordinator. Sakai work cannot be made up in any circumstances, no exceptions. Laboratory work cannot be made up either; you cannot attend another lab section. These types of absences are handled on a case-by-case basis with remedy.

Accommodations for religious reasons:

Students missing a lab experiment due to observing religious holidays must alert the Lab Coordinator no later than the first week after the start of the course to request a special accommodation. This is handled on a case by case basis. The Lab Coordinator reserves the right to contact Campus Ministry, which keeps information on a plethora of religions and holidays.

Students must discuss with the Lab Coordinator the consequences of missing laboratory and the ways [if any] they can be remedied, while also providing the Laboratory Coordinator with proper documentation describing the reason and date of the absence. The document must be signed by an appropriate Faculty/Staff member, and it must be provided as far in advance of the absence as possible. It is a student’s responsibility to proactively ask what will be missed due to absence.

RETURNING TO CAMPUS

Please be familiar with and adhere to all guidelines posted on the *On-Campus Guidelines in Classroom Scenarios of the [Return to Campus Guidelines site](#)*.

COURSE REPEAT RULE

Effective as of the Fall 2017 semester, students are allowed only THREE attempts to pass Chemistry courses with a C- or better grade. The three attempts include withdrawals (W). 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://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.

TUTORING

The Tutoring Center offers free tutoring. Visit the [Tutoring Center Page](#).

GRADING

Reference the grading scale below. There will be no change in the grading scale nor the number of points allotted in this course. It is in your benefit to attend all in person lab experiments to know the content for homework, quiz, and/or lab report. Students cannot earn points for experiments and course work they did not complete! There are weighted grades in the course. A zero (0) is earned for work not completed. If you do not bring your lab notebook to lab, points will be deducted.

The University uses the +/- grading scale system and that system is implemented in this course. Rounding only applies to the final course grade percentage. Sakai reports course grades to TWO digits past the decimal (XX.XX%); this final course grade percentage is rounded to the closest integer. For example, an 89.50% or 89.90% (B+) rounds up to a 90% (A-), BUT an 89.30% or 89.45% (B+) round to the integer 89% (B+).

Grades are posted on Sakai within 48-72 hours of completing the work [Excel homework, notebook entries, Sakai pre/post work]. Any grading discrepancies must be resolved the day the graded work is handed back. Discrepancies in Sakai [grade incorrect, for example] must be resolved no later than one week after reviewing the graded assignment. A student must show proof the work was graded wrong or in the gradebook incorrectly. Grade disputes will not be entertained past 1-week of the graded work being returned to students nor be acknowledged after the last day of class. Be mindful of this policy.

See the next few pages for the course grading scale and a table of all listed graded work.

Grading Scale:

% total	Grade
94 – 100	A
90 – 93	A-
87 – 89	B+
84 – 86	B
80 – 83	B-
77 – 79	C+
74 – 76	C
70 – 73	C-
65 – 69	D+
60 – 64	D
0 – 59	F

Point Breakdown:

Activity	Origin	Points	% of Final Grade
Laboratory Safety virtual lab simulation	Labster	110	10%
Chemistry Safety virtual lab simulation	Labster	130	
Solution Preparation: From Salt to Solution virtual lab simulation	Labster	60	
Titration: Neutralize Acid Lake Contamination virtual lab simulation	Labster	120	
Pipetting: Master the Technique virtual lab simulation	Labster	140	
Spectrophotometers: Building and Exploring the Instrument virtual lab simulation	Labster	30	
Total Labster Points	Labster	590	
Beanium	In Lab/Sakai (Assignments)	20	45%
Determination of Calcium concentration in Loyola Water	In Lab/Sakai (Assignments)	20	
Analysis of Vitamin C content in a Supplement Tablet	In Lab/Sakai (Assignments)	20	
%H₂O₂ in Dental Whiteners	In Lab/Sakai (Assignments)	20	
Spectrophotometric Analysis of a Sports Drink	In Lab/Sakai (Assignments)	20	
Spectrophotometric Analysis of Aspirin Tablet	In Lab/Sakai (Assignments)	20	
Molecular Modeling Activity	In Lab/Sakai (Assignment)	20	
Total Lab + Notebook Points	Sakai (Assignments)	140	

Quiz 1 – Syllabus, Course Requirements, and Safety	Sakai (Tests & Quizzes)	20	20%
Quiz 2 - Beanium	Sakai (Tests & Quizzes)	20	
Quiz 3 - Determination of Calcium concentration in Loyola Water	Sakai (Tests & Quizzes)	20	
Quiz 4 – Titrations and Stoichiometry	Sakai (Tests & Quizzes)	20	
Quiz 5 - Spectrophotometric Analysis	Sakai (Tests & Quizzes)	20	
Total Quiz Points	(Lowest Quiz Dropped)	80	
Basic Statistics in Excel	Sakai (Assignments)	20	5%
Graphing in Excel, Sports Drink Lab	Sakai (Assignments)	20	
Graphing in Excel, Aspirin Tablet Lab	Sakai (Assignments)	20	
Total Excel Activities Points		60	
Formal Laboratory Report 1, Peer Review	Sakai (Assignments)	15	15%
Formal Laboratory Report 1, Final Submission	Sakai (Assignments)	85	
Total Formal Laboratory Report Points		100	
Clean Up, In Lab Safety, Lab Prep	In Lab (Labs #1-6)	10/lab	5%
Total Clean Up, In Lab Safety, Lab Prep		60	

There is no final exam in this course.

Grade if Absent:

A zero (0) is recorded for work not completed, absent or not. The Lab Coordinator has the right to fail a student if two or more absences occur during or if a formal lab report is not turned in. Lab Coordinator will ask for documentation for reasons of an absence whether it is sickness, family emergency, car trouble, funeral, etc.

If you miss a lab, contact your primary Laboratory Coordinator immediately. Request sample data for the lab experiment missed. The sample data is similar to what you may have obtained in lab and may help you study for homework and/or a lab report. You will be responsible for understanding the missed material, and **normal deadlines always apply for completing homework on Sakai. Sample data is worth no points.**

If a student misses two or more lab periods, the result is academic failure *regardless of the performance/grade in the course at the time of the absences.* It is unacceptable to sign up for an accelerated summer course and think it is ok to not attend.

Contact the Lab Coordinator to understand if there is any possibility to makeup the lab experiment or if points associated with the lab experiment's notebook are lost permanently.

Late Work Policies:

QUIZZES: If not completed on time, a 0 is the final grade. Quizzes cannot be accessed after the due date.

NOTEBOOK ENTRIES: If not completed on time, a 48-hour grace period is allotted to turn the work in late [2pt penalty for lateness applied to grade]. After 48-hours, if the notebook pages are not turned in a 0 is the final grade.

EXCEL WORK: If not completed on time, a 48-hour grace period is allotted to turn the work in late [2pt penalty for lateness applied to grade]. After 48-hours, if the Excel work is not turned in a 0 is the final grade.

FORMAL LAB REPORT 1: For peer review, if the report draft is not submitted on time, a 24-hour grace period is allotted to turn the work in late and participate in the peer review [a 2pt penalty for lateness is applied to grade]. After 24-hours, if the report is not turned in a 0 out of 15 for the peer review is the final grade. For the final draft of the report, if not submitted on time a 48-hour grace period is allotted to turn the work in late [2pt penalty per day for lateness applied to grade]. After 48-hours, if the final draft is not turned in a 0 is the final grade.

LABSTERS: All simulations are accessible 24/7; access to simulations opens on Monday, May 23rd and closes at 11:59pm on Wednesday, June 29th. Any simulations not completed by June 29th earn a 0 as the final grade.

As a student in this course, by enrolling you agree to follow and abide by all due dates and understand grades will suffer if work is not turned in on time or if work is not turned in at all.

EDUCATIONAL GOAL

In this general chemistry laboratory course, my purpose as your Lab Coordinator is to provide a hands-on introduction to experimental methods of scientific investigation in Chemistry. The fundamental models of chemistry discussed in lecture will provide the basis for understanding the experimental laboratory work. Each lab will provide a practical opportunity for you to gain competence with the basic techniques of lab work and the practical experience necessary to understand its significance. My goal is that the lab experience will encourage students who are seeking intellectual challenges along with an understanding of the chemical principles in the lab.

Conducting experiments and collecting data to test the validity of theories and models requires a different set of skills than those required for success in the lecture part of a general chemistry course. During a laboratory activity, each student's hands, mind, eyes, as well as other senses are focused on the task at hand. Success in the lab involves skills in making perceptive qualitative observations and accurate quantitative measurements. With each laboratory experiment, relevant questions are posed, and along with TA, I help each student to execute a laboratory approach which will yield reliable data related to these questions. Each student is required to obtain data and to depend upon this data when answers to these questions are drafted. All labs are structured enough so that you should not feel lost or confused, but not so structured that you will find it unnecessary to think for yourself.

REGARDING SAKAI AND TECHNICAL DIFFICULTIES

It is *strongly encouraged* that all required submissions to Sakai as well as writing lab reports, opening course/data/experiment files, be done on a reliable wired internet connection [not wireless], that of which the University itself provides in the Information Commons and various computer labs on the Lake Shore Campus.

Under NO circumstances will excuses of “technical difficulties” be accepted as this syllabus is stating all students should use a wired internet University computer [not wireless internet] to submit work in Sakai, write lab reports, open course/data/experiment files. This list is not exhaustive and it should be noted that any activities this course may require a computer or internet connection for should be completed using University computers with wired internet connection. Use of home internet [wired or wireless], University wireless, or public wireless is at your, the student’s, own risk. It is not prohibited but as stated in this syllabus, Lab Coordinator is not responsible for technical difficulties of non-University devices [cell phone, tablet, home/work/public wireless internet or computer]. Do not submit items in Sakai using a cell phone or a tablet device as these do not count as reliable internet connection tools.”

ACADEMIC INTEGRITY

The standard of academic integrity and personal honesty delineated in the College of Arts & Sciences Statement on Academic Integrity is expected of every student and will be enforced. Details can be found at http://www.luc.edu/cas/faculty_resources.shtml Cheating can take many forms in lab, but the most common forms are copying data and answers to analysis questions, sharing files for homework, or completing Sakai work with another person. The data and analysis as well as the homework submitted for grading must be your own. If it is not, no credit will be awarded for the entire lab, nor will make-ups be granted. Findings of dishonest academic behavior are reported to the Chair of the Chemistry Department and to the Dean’s Office, and are entered into an individual’s record. Copied work will result in penalty for all students involved.

DISABILITY ACCOMMODATIONS

If you have a documented disability and wish to discuss academic accommodations, see/contact your primary Laboratory Coordinator by the first week of lab. The Coordinator of Student Accessibility Center (SAC) is in the Sullivan Center and must be contacted independently.

Necessary accommodations will be made for students with disabilities who procure a SAC letter. However, to receive any accommodations self-disclosure, proper documentation, and registration with the SAC office at Loyola University Chicago is required. Accommodations cannot be made until the Laboratory Coordinator receives proper documentation. Furthermore, accommodations are not retro-active and begin only once appropriate documentation has been received and signed by the Laboratory Coordinator in a timely manner. Recognize that the course time scheduled in LOCUS is fixed. No extra time on wet chemistry is given to a student with an SAC letter; it is not possible and the SAC office has been made aware of this. Only those accommodations that are specifically listed in the formal SAC letter will be provided. If an accommodation letter suggests the Testing Center be utilized to take an exam, it is the student’s responsibility to schedule the testing time in the center. There are no exams in this course. Review [SAC Policies](#).

SMART EVALS

Feedback on the course is important so that a Lab Coordinator can gain insight into how to improve the course, the teaching style, and so the department can learn how best to shape the curriculum for future semesters. Towards the end of the term, students will receive an email from the Office of Institutional Effectiveness with a reminder to provide feedback on the Chem 111 course the student is enrolled in. This office will send you constant reminders during the open period of feedback until the evaluation has been completed. The evaluation is completely anonymous. When the results are released, no one will be able to tell which student provided the individual feedback. The feedback is not released until after the semester is over, therefore any feedback given will not impact student grades.

LOST AND FOUND

Any items mistakenly left in lab will be taken to the Chemistry Department office, 125 Flanner Hall, and can be identified and claimed there. **Please put your name on your Composition notebook, lab manual, calculators, lab goggles, lab coat [tag], and other personal items.**

ADDITIONAL STUDENT RESOURCES

Below are links to information in the event that students need more structured guidance on using the tools in the course. A link to the University Help Desk is provided for technology questions. Students can email the Lab Coordinator. However, links below may reveal the answer quickly.

[First and Second Year Advising](#)

[Information Technology Service Desk](#) (ITS Help Desk)

[Labster Simulation Support and Tips](#)

[Panopto Information](#)

[Resource Guide for Online Learning](#)

[SAKAI student guide](#)

[Success Coaching](#) and [Writing Center](#)

[Student Accessibility Center](#)

[ZOOM Information](#) and [Contacting ZOOM Support](#)

SAFETY IN THE LABORATORY

Laboratory safety is everyone's responsibility. By registering for and participating in this course you agree to abide by all of the safety precautions, information, and rules provided to you in the syllabus as well as in or outside of the laboratory. Failure to follow these rules constitutes grounds for withdrawing the offending student from the lab session and or course at any time.

The Laboratory Coordinator, TA, and University take safety in the laboratory very seriously. Make sure to always listen to information regarding extra safety precautions when applicable. The rules of safety listed on the following page are reviewed during the first day of the laboratory course. Practice safe laboratory conduct during the entire term and beyond. This list is not exhaustive and it is the student's responsibility to understand the proper, safe conduct when working in a laboratory. Students cannot complete experiments in the course unless the safety lecture and safety form are completed.

By using common sense and following all of the safety rules provided, it is unlikely that you or your classmates will be involved in or injured in a mishap in the laboratory. While it is very important that you do your part to prevent an accident from occurring, it is just as important to know what to do if someone is injured.

There are several key safety features of a laboratory that will be pointed out during the first day of class. Preventing an accident or injury from occur is the ideal case scenario, which is why proactively being safe in the laboratory is desired. We live in the real-world and therefore have to be reactive in case of a lab incident.

Although not a requirement, it can be very helpful if a Laboratory Coordinator knows if a student has a condition that could possibly render an unsafe lab situation (allergies to latex, heart condition, seizure risk, etc.). Do feel free to discuss any concerns you may have regarding health conditions and laboratory work.

Your commitment to safety [including the following rules] is very important:

1. Watching the required Panopto videos on the lab experiment *before* coming to lab to complete the experiment. This ensures students are aware of chemicals, equipment, and safety.
2. To always be on time to lab. Coming in late violates safety. Pre-lab lecture starts on time and missing any of its content is unsafe.
3. To wear a face mask, approved safety goggles¹ and a [buttoned] long-sleeve laboratory coat at all times in the laboratory. Safety glasses are NOT allowed under any circumstances.
4. Non-latex, nitrile glove are optional but *highly* encouraged, especially when working with acids and bases or solvents. Do not wear gloves in the hallway or anywhere outside of lab. Gloves are provided for free in the laboratory!
5. To know both the location of and how to use eye washes.

6. Not to wear contacts in the laboratory. Eyeglasses are recommended.
7. To wear appropriate clothing that minimizes potential chemical contact with your skin. A lab coat is required, as are shoes that adequately cover the entire foot. Sandals, open-toe shoes, perforated shoes, open-backed shoes are not acceptable. No skin should be exposed on your feet, ankles, or legs, so clothing that covers and protects your body from the waist down (including ankles) should be worn. You must be dressed appropriately to do experiments.
8. To know both the location of and how to use the safety showers.
9. To know both the location of and how to use the fire extinguishers.
10. To know the proper clean-up and disposal procedure for broken glass.
11. Not to perform unauthorized and unknown experiments, nor work in the lab alone.
12. Not to take chemicals or equipment out of the laboratory.
13. Not to engage in horseplay or any clowning around that may endanger you or other students.
14. Not to eat, drink, chew gum, or smoke anything in the laboratory at any time. No headsets, cell phones, or any other audio devices.
15. Cell phones cannot be used as calculators.
16. To pull long hair back, keeping it away from chemicals and open flame.
17. To keep your lab space clean and tidy. Lock your lab locker when done.
18. To ask your Instructor or TA when in doubt about procedures.
19. Inform your Instructor of any health condition you have that might affect your performance or safety in the laboratory. This could include allergies, sleeping disorders, balance/orientation disorders, seizure susceptibility, impaired visions, etc. It is up to the student to disclose anything they feel could put them at increased safety risk in the laboratory. Anything revealed will remain confidential [between student, TA, and Lab Coordinator].

This list is not exhaustive. The Lab Coordinator and/or Teaching Assistants reserve the right to make a judgement call on an activity they deem unsafe taking place in the laboratory. Safety is a priority and students who do not follow the rules can be removed from the course, and if necessary Campus Safety will be called.

If you have any questions regarding the content of this syllabus, including the safety information provided, you are encouraged to discuss all questions/concerns with the Laboratory Coordinator. The information provided on the following page are some basic reactive procedures to difference scenarios that have occurred in the laboratory.

FIRST AID BASICS

Minor Cuts: Clean wound, remove foreign material. Band-Aids available. Two Band-Aid rule: If you bleed through one Band-Aid, another should be applied over the first Band-Aid. If you bleed through two Band-Aids in a few minutes, you will be escorted to the Wellness Center. Additionally, if there is any possibility of broken glass in a cut, you will be escorted to the Wellness Center via Campus Safety personnel.

Minor Burns from Fire: Immerse affected area in ice water.

Chemicals in Eyes: Immediately flush eyes with water at the eye wash. Continue with flush for at least 10 minutes. Hold the affected eye(s) open to do this properly.

Chemicals on Skin: Rinse affected area with water immediately at the sink or safety shower. If clothing is affected, remove clothes before rinsing! Continue rinse for at least 10 minutes.

Critical Injuries may include: glass in his/her eye(s), serious cuts, severe chemical burns, severe fire burns, seizures. **Immediately call for help using either the lab phone (security number is taped to phone handle, 8-6039) or the emergency phone in the hallway directly outside the laboratory.** Anyone with chemicals or foreign objects in his/her eye(s) will be escorted to the Wellness Center or to the hospital.

FIRE HAZARDS

The primary heat source in this laboratory is an electric hot plate. It can serve as an ignition source for combustible materials in the lab, such as paper (lab handouts, paper towels, filter paper, etc.), plastics (wash bottle), flammable liquids (acetone, ethanol). Proper operation of a hot plate and the absence of combustible materials in the proximity of the hot plate significantly reduces the risk of a fire or injury. Keep chords, plastic, and paper products away from hot plates. Make sure hot plates are off & un-plugged before leaving lab. Avoid spilling chemicals on hot plates.

Each lab is equipped with several fire extinguishers, fire blanket, and safety showers, which should be used in a fire emergency.

In a case of a fire:

Remain calm; alert the instructor and your immediate neighbors.

Personal safety, yours and others in the labs, is always the top priority.

A small fire in a small container can be suffocated by covering it with a watch glass or inverted beaker.

With a somewhat larger fire, decide whether or not you think you can control it with a fire extinguisher.

Use of a Fire Extinguisher:

Located by the 4 doors in lab; a back-up fire extinguisher is located in the hallway [west]. Maintain an escape position; i.e. stay between the fire and the doorway.

PASS (pull, aim, squeeze, sweep).

Break the plastic ring, pull out the metal ring, release the hose from the bracket, direct the hose at the base of the flames, and press the lever down.

Note: Fire extinguishers are heavy and not particularly easy to direct. These are multi-purpose, dry chemical extinguishers, safe for anything we use in lab.

See next pages for detailed schedule of pre-lab lecture requirements, in lab experiments, and homework items.

Tentative Chem 111 Schedule / Order of Lab Experiments

The tentative schedule for the entire 6-week course is on the next page(s). The schedule shows required pre-lab work, in-lab experiments, and items for homework. Review the schedule daily. Do not expect leniency if you forget to turn in course work; the schedule will not be changed. See Late Work Policy.

Items with parentheses () tell where the item is located in Sakai. For example, “Sakai Quiz in Safety and Course Policies (*Tests & Quizzes*)” means it is in Tests & Quizzes tool in Sakai.

All lab experiments are completed as an individual unless otherwise noted. If there is a partner lab, a maximum of 2 students may work together to complete it.

WEEK & Dates	Meeting Type	Lecture, Lab Activity, & Homework* *activity opens on the class day it is listed	Due Dates
WEEK 1	Synchronous, in-person lab	<p style="text-align: center;">Lecture to Watch BEFORE Class Meets: Intro & Syllabus Lecture (Panopto)</p> <p style="text-align: center;">Lecture Content in Class: Glassware, Equipment, & Safety Lecture Sakai and Labster Demo Data Tables Insight</p> <p style="text-align: center;">Lab Activity/Experiment in Class: Designing data tables, reading glassware, measuring liquids, measuring solids, transferring solutions, etc.</p> <p style="text-align: center;">Homework in Sakai (listed below), due by next lab period:</p> <p>*read entire syllabus if you have not yet done so*</p> <ol style="list-style-type: none"> 1. Practice submitting notebook pages to Sakai, submit lab activity pages as PDF file to Sakai (<i>Assignments</i>) 2. Complete Laboratory Safety Simulation (<i>LABSTER</i>) 3. Complete Chemical Safety Simulation (<i>LABSTER</i>) 4. Quiz on Syllabus, Course Req., Safety (<i>Tests & Quizzes</i>) 5. Importance of a Lab Notebook Lecture (Panopto), also read related PDF document (Resources) 6. Read Berman lab experiment (PDF manual, Resources) AND Watch Berman lab lecture (Panopto) 7. Write date, title, intro, safety information for Berman in lab notebook. Must be done before walking in lab on Thurs.! 8. Watch Significant Figures, Accuracy & Precision Lecture (Panopto) 	All Homework listed on Tues. is DUE on Thursday, May 26th by 1:30pm
Tuesday, May 24			

WEEK & Dates	Meeting Type	Lecture, Lab Activity, & Homework* *activity opens on the class day it is listed	Due Dates
<p>WEEK 1</p> <p>Thursday, May 26</p>	<p>Synchronous, in-person</p>	<p>Lecture Content in Class: Beanium Lab Lecture</p> <p>Lab Activity/Experiment in Class: Complete the Beanium Lab experiment</p> <p>Homework in Sakai (listed below), due by next lab period:</p> <ol style="list-style-type: none"> 1. Submit Beanium lab notebook pages PDF (Assignments) 2. Watch the <i>Lab Techniques</i> video (JoVE) and Common Glassware and Uses video (JoVE) 3. Read Hard Water lab experiment (PDF manual, Resources) AND Watch Hard Water lab lecture (Panopto) 4. Write date, title, intro, safety information for Hard Water in lab notebook. Must be done before walking in lab on Tues.! 	<p>All Homework listed on Thurs. is DUE on Tuesday, May 31st by 1:30pm</p>
<p>WEEK 2</p> <p>Tuesday, May 31</p>	<p>Synchronous, in-person</p>	<p>Lecture Content in Class: Hard Water Lab Lecture</p> <p>Lab Activity/Experiment in Class: Complete the Hard Water Lab experiment</p> <p>Homework in Sakai (listed below), due by next lab period:</p> <ol style="list-style-type: none"> 1. Quiz on Beanium Lab (<i>Tests & Quizzes</i>) 2. Submit Hard Water lab notebook pages PDF (Assignments) 3. Watch Basic Excel Statistics Lecture (Panopto) and review Sig Figs, Accuracy & Precision Powerpoints if needed. 4. Complete Excel statistics activity with the file emailed to you. Submit finished file to Sakai (Assignments) 5. Watch Solutions, Solution Prep, and Concentrations Lecture (Panopto) 6. Watch <i>Solutions & Concentrations</i> video (JoVE) and <i>Making Solutions in Lab</i> video (JoVE) 7. Complete the Solution Prep: From Salt To Solution Simulation (<i>LABSTER</i>) 	<p>All Homework listed on Tues. is DUE on Thursday, June 2nd by 1:30pm</p>

WEEK & Dates	Meeting Type	Lecture, Lab Activity, & Homework* *activity opens on the class day it is listed	Due Dates
<p>WEEK 2</p> <p>Thursday, June 2</p>	<p>Synchronous, in-person</p>	<p>Lecture Content in Class: Scientific Writing and Formal Lab Report Lecture</p> <p>Lab Activity/Experiment in Class: *Ask questions about Hard Water Lab and/or Report writing. *Must brainstorm 3-4 topics to discuss in report Introduction and show list to Dr. Binaku before leaving lab.</p> <p>Homework in Sakai (listed below), due by next lab period:</p> <ol style="list-style-type: none"> 1. Quiz on Hard Water Lab (<i>Tests & Quizzes</i>) 2. Review all formal lab report guidelines (Formal Lab Report) *PDF guides, videos, etc. on scientific writing and formal lab report. 3. Type complete first draft of formal lab report on Hard Water lab. Submit file as a Word document to Sakai (Assignments) 4. Read Vitamin C lab experiment (PDF manual, Resources) AND Watch Vitamin C lab lecture (Panopto) and Stoichiometry & Titration lecture (Panopto) 5. Write date, title, intro, safety information for Vitamin C in lab notebook. Must be done before walking in lab on Tues.! 6. Complete the Titration: Neutralize Acid Lake Contam. Simulation (<i>LABSTER</i>) 	<p>Homework listed on Thurs. is DUE on Tuesday, June 7th by 1:30pm</p>
<p>WEEK 3</p> <p>Tuesday, June 7</p>	<p>Synchronous, in-person</p>	<p>Lecture Content in Class: Vitamin C Tablet Analysis Lab Lecture</p> <p>Lab Activity/Experiment in Class: Complete the Vitamin C Tablet Analysis Lab experiment</p> <p>Homework in Sakai (listed below), due by next lab period:</p> <ol style="list-style-type: none"> 1. Submit Vitamin C lab notebook pages PDF (Assignments) 2. Read % H₂O₂ Dental Whiteners lab experiment (PDF manual, Resources) AND Watch % H₂O₂ Dental Whiteners lab lecture (Panopto) 3. Write date, title, intro, safety information for % H₂O₂ Dental Whiteners in lab notebook. Must be done before walking in lab on Thursday! 4. Complete the Pipetting Simulation (<i>LABSTER</i>) 	<p>Homework listed on Tues. is DUE on Thursday, June 9th by 1:30pm</p>

WEEK & Dates	Meeting Type	Lecture, Lab Activity, & Homework* *activity opens on the class day it is listed	Due Dates
<p>WEEK 3</p> <p>Thursday, June 9</p>	<p>Synchronous, in-person</p>	<p>Lecture Content in Class: % H₂O₂ Dental Whiteners Lab Lecture</p> <p>Lab Activity/Experiment in Class: Complete the %H₂O₂ Lab experiment</p> <p>Homework in Sakai (listed below), due by next lab period:</p> <ol style="list-style-type: none"> 1. Submit % H₂O₂ Dental Whitener lab notebook pages PDF (Assignments) 2. Watch Peer Review lecture (Panopto) AND read over PDF of reviewing formal lab reports (Formal Lab Reports). 3. Complete the peer review process for drafts of student formal lab reports assigned to you in Sakai. Submit each student's report feedback in Sakai (Assignments) 4. Check over graded work thus far. Contact Dr. Binaku with any grading questions or if you see a discrepancy/error. We are halfway through summer session course! 	<p>Homework listed on Thurs. is DUE on Tuesday, June 14th by 1:30pm</p>
<p>WEEK 4</p> <p>Tuesday, June 14</p>	<p>Asynchronous, NOT in person IF perfect attendance so far.</p>	<p>MAKE UP LAB DAY</p> <p>*Students who have missed any of the first 4 lab experiments must attend lab today to make up the work*</p> <p>*Students who have not missed any lab experiments, do <u>not</u> have to attend lab today and can get started on revising their formal lab report for Hard Water.</p> <p>Homework in Sakai (listed below), due by next lab period:</p> <ol style="list-style-type: none"> 1. Quiz on Titration and Stoichiometry (<i>Tests & Quizzes</i>) 2. All student must read over peer review feedback. Make ANY changes you want to in draft of Hard Water formal lab report file. 3. Submit FINAL DRAFT of Hard Water formal lab report as a Word document (Assignments) 4. Watch Light, Beer's Law lecture (Panopto) 5. Read Sports Drink lab experiment (PDF manual, Resources) AND Watch Sports Drink lab lecture (Panopto) 6. Write date, title, intro, safety information for Sports Drink lab in lab notebook. Must be done before walking in lab on Thurs.! 	<p>Homework listed on Tues. is DUE on Thursday, June 16th by 1:30pm</p>

WEEK & Dates	Meeting Type	Lecture, Lab Activity, & Homework* *activity opens on the class day it is listed	Due Dates
<p>WEEK 4</p> <p>Thursday, June 16</p>	<p>Synchronous, in-person</p>	<p>Lecture Content in Class: Spectrophotometric Sports Drink Analysis Lab Lecture</p> <p>Lab Activity/Experiment in Class: Complete the Sports Drink Analysis Lab experiment</p> <p>Homework in Sakai (listed below), due by next lab period:</p> <ol style="list-style-type: none"> 1. Submit Sports Drink lab notebook pages PDF (Assignments) 2. Watch <i>Spectrophotometry</i> videos (JoVE) 3. Complete Spectrophotometers: Building & Exploring Instrument Simulation (<i>LABSTER</i>) 4. Read Microsoft Office directions for how to download program for FREE to computer device. 	<p>Homework listed on Thurs. is DUE on Tuesday, June 21st by 1:30pm</p>
<p>WEEK 5</p> <p>Tuesday, June 21</p>	<p>Synchronous, in-person</p>	<p>Lecture Content in Class: Graphing Beer's Law Relationships Lecture</p> <p>Lab Activity/Experiment in Class: Review your Sports Drink Analysis Lab experiment data</p> <p>Homework in Sakai (listed below), due by next lab period:</p> <ol style="list-style-type: none"> 1. Complete graphing in Excel assignment using Sports Drink calibration curve data. Submit Excel file (Assignments) 2. Read Spectrophotometric Analysis of Aspirin Tablet lab experiment (PDF manual, Resources) AND Watch Aspirin Analysis lab lecture (Panopto) 3. Write date, title, intro, safety information for Aspirin Tablet Analysis lab in lab notebook. Must be done before walking in lab on Thurs.! 	<p>Homework listed on Tues. is DUE on Thursday, June 23rd by 1:30pm</p>
<p>WEEK 5</p> <p>Thursday, June 23</p>	<p>Synchronous, in-person</p>	<p>Lecture Content in Class: Spectrophotometric Aspirin Tablet Analysis Lab Lecture</p> <p>Lab Activity/Experiment in Class: Complete the Aspirin Tablet Analysis Lab experiment</p> <p>Homework in Sakai (listed below), due by next lab period:</p> <ol style="list-style-type: none"> 1. Submit Aspirin lab notebook pages PDF (Assignments) 2. Quiz on Spectrophotometric Analysis (<i>Tests & Quizzes</i>) 3. Graph Aspirin calibration curve data in Excel. Submit Excel file (Assignments) 	<p>Homework listed on Thurs. is DUE on Tuesday, June 28th by 1:30pm</p>

WEEK & Dates	Meeting Type	Lecture, Lab Activity, & Homework* *activity opens on the class day it is listed	Due Dates
<p>WEEK 6</p> <p>Tuesday, June 28</p>	<p>Synchronous, in-person</p>	<p>Lecture Content in Class: Molecular Modeling: Using Computer Simulations in Chemistry</p> <p>Lab Activity/Experiment in Class: Molecular Modeling Simulations</p> <p>Homework in Sakai (listed below), due by next lab period:</p> <ol style="list-style-type: none"> 1. Turn in results of molecular modeling work (Assignments) 2. Complete anonymous survey on this work (<i>Tests & Quizzes</i>) 3. Check all grades in Sakai (Gradebook). Contact Dr. Binaku via email with any questions or if you see any discrepancies. Bring grading questions to class on Thursday too! <p>REMINDER: ALL Labsters [unlimited attempts] close on Wednesday, June 29th at 11:59pm. Grades are final for them.</p>	<p>ALL Labsters close on Wednesday, June 29th at 11:59pm</p> <p>Other Homework listed on Tues. is DUE on Thursday, June 30th by 1:30pm</p>
<p>WEEK 6</p> <p>Thursday, June 30</p>	<p>Synchronous, in-person</p>	<p><u>LAST DAY OF CLASS</u></p> <p>Lab Equipment Checkout/Count Undergrad Research/REU/Internship Information</p> <p>MAKE UP LAB DAY: Last opportunity to makeup lab 5, 6, or 7 if absence occurred.</p> <p>All grading questions must be resolved during class time, in-person. Grades are final and go in LOCUS today after class since Chem 111 is a pre-req to Chem 112 in summer session II. Emails after today about grades will be ignored as grades are final.</p>	<p>You are done with class! BRAVO 😊</p>

See the following page for a calendar view of the 6-week course.

Tentative Calendar of Chem 111 Laboratory, Summer 2022

Month	Mon	Tue	Wed	Thu	Fri
May 2022	23	24 First Day Intro, Safety, Glassware, Data Tables, etc.	25	26 Lab #1 Benium	27
	30	31 Lab #2 Hard Water	1	2 Scientific Writing Exercise	3
June 2022	6	7 Lab #3 Vitamin C Analysis	8	9 Lab #4 Dental H ₂ O ₂ Analysis	10
	13	14 Asynchronous OR Make Up Lab Day	15	16 Lab #5 Sports Drink Analysis	17
	20	21 Graphing Beer's Law Relationship	22	23 Lab #6 Aspirin Tablet Analysis	24
	27	28 Lab #7 Molecular Modeling	29	30 Last Day Check Out And Last Make Up Lab Day	1

The Laboratory Coordinators reserve the right to revise any content in the syllabus or course in order to correct any unintentional mistakes and/or to change the labs or lab directions for the class if necessary. Students will be notified if any changes have been made.