



Chemistry 112, General Chemistry Laboratory B

Summer II 2021 Syllabus

Chem 112-001 to 112-002, General Chemistry Lab B (1 credit hour)
July 6th – Aug. 13th, 2021
Lab Location: ONLINE

Prerequisite: Math Placement Test or Math 117 & Chem 111

Lab Location: ONLINE; there are no on-campus meetings.

Course Meeting Times: This course is designed to be as asynchronous (pre-recorded lectures, independent videos and/or virtual labs, other activities) components. Only office hours will be synchronous in ZOOM. 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 email. As a student enrolled in the course, you agree to abide by, follow, and complete all course aspects including rules, requirements, virtual labs, lab reports, assignments, homework, quizzes/tests/exams, due dates, etc. This course requires your full commitment. All times listed are Central Standard Time (CST).

- **Office hours: Synchronous sessions in ZOOM :**

The ZOOM link for office hours is accessed from the ZOOM tool in Sakai. You log in to Sakai to join. Make sure your ZOOM name is full First Name and Last Name. Odd usernames will not be allowed into ZOOM to combat any unauthorized access. Be mindful of this!

- **Asynchronous sessions (not meeting in real-time):** Pre-recorded lectures will be posted in Sakai. It is student's responsibility to watch the lectures and complete the assigned homework. Be mindful of due dates.

Academic Calendar: It is the student's responsibility to not only know the schedule for this course but also the official [University Academic Calendar](#) and important dates on that calendar.

Laboratory Coordinator: Mrs. Agnes Pecak,

Office Hours in ZOOM: Wednesdays: 12:00 pm-1:30 pm and by a scheduled ZOOM appointment.

Email: aorlof@luc.edu

Laboratory Coordinator: Dr. Y. Corey Lin

Office Hours in ZOOM: Wednesdays 10:30-12:00pm and by a scheduled ZOOM appointment.

Email: ylin21@luc.edu

Welcome to Chem 112. We look forward to having you in the course this summer session II. Check Loyola email & log-in to Sakai often. Read the entire syllabus to understand the course expectations.

The Laboratory Coordinators reserve the right to revise this syllabus in order to correct any unintentional mistakes found at any point of the semester. Students will be notified if any changes have been made.

Email Etiquette: When sending emails please put Chem 112 and your section # noted in LOCUS [for example, Chem 112-002] in the subject line or there will be a delay in response time. The Lab Coordinator assigned to your section teaches multiple courses and must know which course a student is in before replying to email. Weekday emails will get a response within a few hours. Emails after 8:00 pm may not be replied to until the following morning. The lab coordinator checks email on weekends; response times are longer [up to 24-hours].

A Teaching Assistant (TA) assists me in the course. TA responsibilities include but are not limited to holding one weekly office hour, presence in synchronous sessions, grading materials, 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 your lab coordinator and teaching assistant with the same question; one reply will be given and it will be the same answer whether emailing lab coordinator or teaching assistant.

COURSE DESCRIPTION

This 2nd semester general chemistry lab course continues emphasis of lab experiments & data collection, data interpretation/analysis, and scientific writing. Lab topics are related to some topics/theory covered in the lecture course (Chem 102). The course introduces students to intermolecular forces, matter and phase changes, distillation, chromatography, chemical kinetics, chemical equilibrium, acids & bases, continued use of net ionic equations, redox reactions, fermentation, and re-crystallization. Continued exposure and enhancement of scientific writing skills is achieved through formal lab reports & keeping a lab notebook. Dimensional analysis and significant figures also play a continued role in the success of students in the course. These lists are not exhaustive but note the course highlights.

Goals of course: 1) extend laboratory skill knowledge built on Chem 111 basics, 2) apply qualitative and quantitative techniques to collect experimental data via Labster and appropriately interpret experimental results, and 3) improve scientific writing skills and documentation of laboratory data and analysis. Outcomes: 1) demonstrate chemical kinetics, equilibrium, and acid – base theory through successful Labster completion, notebook entries, and various online quizzes, 2) connect calculations to course concepts through successful lab notebook experiment calculations, data interpretation, and various online quizzes, 3) demonstrate enhanced scientific writing skills through experimental lab notebook and scientific lab reports.

REQUIRED ITEMS

- 1) Desktop or Laptop computer. Virtual Lab simulations do NOT work on tablets nor mobile devices. Computer must have a microphone and speakers to participate in synchronous sessions and for office hours. If you do not have a desktop or laptop computer, you need to contact the Information Commons [extended loan equipment program](#) within the first week of summer session II and arrange this resource. Lab Coordinator is not responsible for coordinating this resource for students nor responsible for the loaned device. Everything in this course requires a computer for access.
- 2) High-speed Internet access: Wired (ethernet cable) preferred but WI-FI is ok. Make sure WI-FI connection is reliable. Lab Coordinator is not responsible if internet goes out when you are working on course items. Contact the Information Commons [extended loan equipment program](#) within the first week of the summer session II and arrange this resource if you do not have internet at home. Lab Coordinator is not responsible for coordinating this resource for students nor responsible for the loaned device.
- 3) Scientific OR graphing calculator. Suggested model: CALC TI30XA SCIENTIF/STAT FRAC. A graphing calculator is o.k. too. Cell phones are not calculators; do not use them for calculations.
- 4) [Sakai access](#) via the internet to review/complete course content, resources, review grades, etc.
- 5) Labster – web-based lab experiment simulations. Access directions to [Labster](#) will be in an email and a link will be provided in Sakai. Labster is the foundation of the course. Lab experiment exercises are completed in a virtual lab. Labster will only run on a desktop or laptop computer.
- 6) [ZOOM video & web conferencing software](#) (free for LUC students). UVID username and password may be required to access and download ZOOM, enter synchronous course meetings, office hours, etc. See [ZOOM participation instructions](#) supplied by the University for more info. Links to ZOOM for office hours will be provided in Sakai.

- 7) Panopto (free for LUC students). One format of recorded course content is Panopto videos. You may be prompted to log in with UVID username and password to view the videos. Links to videos will be provided in Sakai and via email.
- 8) Microsoft 365 (free for LUC students) to write a formal lab report. Information is supplied on [how to download & access Microsoft 365 for free](#).
- 9) Composition style notebook (not spiral bound & no tear-out perforations). Line ruled.
- 10) CamScanner or Genius Scan phone app, for iPhone or Android. This is a free app that will convert a phone picture to a PDF file. It may be necessary to take pictures of your Composition notebook pages and upload them for grading as a PDF file.
- 11) A non-erasable pen is useful for writing notes in the Composition Notebook.
- 12) Periodic table. There is a cool one provided for free by the [Museum of Science & Industry](#).

INSTRUCTIONAL FORMAT

- The asynchronous sessions are designed as time set aside for you to watch the lecture recordings and work on lab simulations, instead of meeting in ZOOM. Of course, you have access to the lab simulations 24/7 when they are opened; use time wisely to complete the necessary work as most of the course work is asynchronous and has specific due dates that will not be adjusted. If lab simulations are completed AFTER the due date listed, the student will not get any credit for doing them.
- We are going to have fun with Labster simulations! [Labster](#) gives students direct exposure to laboratory protocols and the ability to experience a variety of experiments in a virtual space. Labster & Sakai work, as well as quizzes & a formal lab report, serve as a basis for earning points and showing course progress. Labsters can be completed an unlimited number of attempts to earn the ‘best’ grade; but there will be post-lab assignments that are due at specific dates.

GENERAL POLICIES

- Course work will be graded with an emphasis on correct significant digits, consist results (do data & observations match conclusions), completion of the Labsters, correctness of calculations & analysis, and thoroughness in responses. Following directions of reporting calculated answers are taken into account.
- The Composition notebook needs to contain all laboratory experiment information [Date, Title, data/observations/calculations, and conclusion for the experiment]. It will be useful to record progress during the Labster experiment simulations to keep track of calculations, data, etc. Use the notebook as a resource. Feel free to take class notes in it as well; it is a place to organize your thoughts which is important in an online course. A lot of the success in an online course is the student being organized. The lab coordinator will see the actual lab notebook in pictures when it is uploaded as a PDF using the apps mentioned.
- Aspects of course work must be completed in the avenue/medium that they are provided in and in the time allotted [i.e. be mindful of due dates]. This means that a lab simulation can only be completed in Labster, for example, or Test and Quizzes in Sakai can only be submitted in Sakai. Course work items such as homework, quizzes/tests/exams, lab simulation results, lab report, etc. can never be submitted via email. No exceptions. Submit them in their required, respective medium and do so on time.
- Be mindful that everything in the course has a due date. Course work cannot be made up. There are no exceptions to this rule. Late work is not accepted other than when noted. **LATE POLICY: Test & Quizzes cannot be completed/done late. Notebooks can be submitted up to 3 days late but there is a 2pt penalty to the score. Formal lab reports can be submitted up to 1 week late but there is a 2pt penalty PER DAY of lateness.** Labsters must all be completed by August 10th, Tuesday by 11:59 PM Although majority of the course requirements are asynchronous work; there are due dates and they must be followed.
- There is a point value associated with the work, and one cannot earn points for work not completed. **There are no makeups allowed i.e. students cannot make up Sakai work that they missed the due**

date for. There are eight lab experiments and students are expected to complete all of them; if a lab simulation is not completed by the specific deadline at the end of the course, a zero (0) is earned. No makeup work is given.

- Students should not enroll in courses that they cannot fully attend. Missing 2 or more of the lab simulations is significant and unacceptable and will result in academic failure. The same penalty applies if either of the formal lab reports are not turned in.
- Although probably not applicable, since all University activities are suspended: Students participating in co-curricular activities must make information concerning time conflicts with University sponsored events available to the Laboratory Coordinator within the first two weeks of the semester. The Laboratory Coordinator reserves the right to contact the Athletics Department. 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. No extensions nor modifications will be made; this is an online course.
- Students missing a lab experiment due to observing religious holidays must alert the Lab Coordinator no later than two weeks after the start of the summer session II 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. Since lab is online and access to virtual simulations are twenty-four hours for several days; there should be no conflicts.

RECORDING POLICY AND COURSE CONTENT POLICY

- ZOOM and recording software will be used to record asynchronous sessions. The asynchronous recordings will be made available only to students enrolled in the course, via Panopto. All recordings will become unavailable to students in the class when the Sakai course is unpublished (i.e. shortly after the course ends, per the [Sakai administrative schedule](#)).
- The use of all video recordings will be in keeping with the University Privacy Statement shown below: 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 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. Recordings are not shared outside of this course.
- All activities pertaining to the course should be completed as an INDIVIDUAL. Any collaboration on course material and/or graded materials can constitute cheating. Failure of the course may result if an instance of copying or sharing answers to graded content is discovered by TA or Lab Coordinator.
- **Course content is designed for use ONLY by students in this course. All materials are subject to privacy and copyright laws. Students are NOT allowed to share any course resources, Labster info, Panoptos, PowerPoints, quiz/test/exam questions, documents, etc. with anyone nor post to any outside media. The Chem 112 syllabus and all course materials are NOT allowed for distribution outside of class nor outside of the University. Uploading, posting, copying, or sharing electronic/non-electronic Chem 112 materials outside of class [i.e. share sites] is NOT allowed. If discovered that a student completes such action, the Dean and University get notified immediately.**
- **Chegg, Course Hero, Reddit, among other webpages, are monitored by the Lab Coordinator. If any Chem 112 course content is posted on these sites or other, the Dean and University will be notified. Student(s) involved may fail the content the posted material pertains too and/or fail the course. Posting any course content online to facilitate getting answers is a form of cheating and will not be tolerated.**

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 access it from the Department of Chemistry & Biochemistry website, 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.

ROLE OF TEACHING ASSISTANTS

The function of a TA is to help the Lab Coordinator facilitate online learning content and provide individual help to students when necessary. TA will not do the course work for you nor release answers. TA will help students develop critical thinking and problem-solving skills. Contact your Lab Coordinator if there are any questions or concerns that the TA cannot handle appropriately. Students can always email the Lab Coordinator; TA is present to help answer student questions too. The Lab Coordinator has final authority in all matters relating to the course. Utilize both the Lab Coordinator and TA for assistance. *If at any point you want to talk to the Lab Coordinator regarding the TA, please do. The TA should enhance the educational experience. If this is not the case, talk to me.

TUTORING

To find more information visit the [Tutoring Center webpage](#).

GRADING

Reference the grading scale below. There will be no change in the grading scale nor the number of points allotted in this course. There are no dropped grades in the course. Every piece of course work is counted toward the course grade. It is in your benefit to complete all lab experiment simulations to know the content for homework, quiz/test/exam, and/or a formal lab report. There are weighted grades in the course. A zero (0) is earned for work not completed. Remember that there is no makeup work; no exceptions. 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 of completed online items are posted on Sakai within one week of completion. Grading of the formal lab reports may take longer than one week. Any grading discrepancies must be resolved no later than two business days after the grade & feedback are released in Sakai. A student must show proof the work was graded wrong or grade entered incorrectly. Grade disputes will not be entertained past one week nor be acknowledged after the last day of class. Be mindful of this policy.

Labster allows multiple tries in a simulation, the BEST attempt grade is the grade that is recorded. Be mindful that multiple attempts on the lab is OK, however, there will be post-lab quizzes that have to be completed by a specific due date regardless of how many times the Labster itself is completed.

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 (Need to update after discussion on the highlighted items):**

Activity	Origin	Points	% of Final Grade
Matter & Phase Change virtual lab simulation	Labster	100	40 %
HPLC virtual lab simulation	Labster	100	
Reaction Kinetics: The Essentials virtual lab simulation	Labster	100	
Equilibrium Compound virtual lab simulation	Labster	100	
Advanced Acids and Bases virtual lab simulation	Labster	100	
Fermentation virtual lab simulation	Labster	100	
Redox Reactions Batteries virtual lab simulation	Labster	100	
Recrystallization virtual lab simulation	Labster	100	
Total Labster Points	Labster	800	
Quiz on Safety Rules in the Laboratory	Sakai (Tests & Quizzes)	20	15 %
Quiz on Reaction Kinetics: The Essentials	Sakai (Tests & Quizzes)	20	
Quiz on Equilibrium	Sakai (Tests & Quizzes)	20	
Quiz on Advanced Acids and Bases	Sakai (Tests & Quizzes)	20	
Quiz on Fermentation	Sakai (Tests & Quizzes)	20	
Quiz on Recrystallization	Sakai (Tests & Quizzes)	20	
Total Quiz Points	Sakai (Tests & Quizzes)	120	
Notebook Entry for Matter & Phase Change virtual lab simulation	Sakai (Assignments)	20	25 %
Notebook Entry for HPLC virtual lab simulation	Sakai (Assignments)	20	
Notebook Entry for Reaction Kinetics: The Essentials virtual lab simulation	Sakai (Assignments)	20	
Notebook Entry for Equilibrium Compound virtual lab simulation	Sakai (Assignments)	20	
Notebook Entry for Advanced Acids and Bases virtual lab simulation	Sakai (Assignments)	20	
Notebook Entry for Fermentation virtual lab simulation	Sakai (Assignments)	20	

Notebook Entry for Redox Reactions Batteries virtual lab simulation	Sakai (Assignments)	20	
Notebook Entry for Recrystallization virtual lab simulation	Sakai (Assignments)	20	
Total Notebook Entry Points	Sakai (Assignments)	160	
Formal Laboratory Report 1, typed: Paper Chromatography [PDF or Word Doc]	Sakai (Assignments)	100	20 %
Formal Laboratory Report 2, typed: Buffer [PDF or Word Doc]	Sakai (Assignments)	100	
Total Formal Laboratory Report Points	Sakai (Assignments)	200	

Total point now is 1280 on the table!

Grade if an Assignment/Course Work is Missed: As stated earlier in the syllabus, makeup work is not given. A zero (0) is recorded for work not completed. You will be responsible for understanding the missed material, and normal deadlines apply for completing related items. This is an online course which affords flexibility in completion of items [access 24/7 to lab simulations during their open periods before the due date, as opposed to an in-person laboratory having 3 hours to complete a lab]. Sometimes life happens and the Lab Coordinator understands that; contact the Lab Coordinator if any legitimate emergencies arise. Lab Coordinator has the right to fail a student if two or more lab simulations are not completed or if the formal lab report is not turned in.

EDUCATIONAL GOAL

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

Conducting experiments and collecting data to test the validity of theories and models requires a different set of skills that those required for success in a general chemistry lecture course. During a lab simulation activity, each student's virtual 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. All labs are structured enough so that students should not feel lost or confused, but not so structured that students will find it unnecessary to think for oneself.

REGARDING SAKAI AND TECHNICAL DIFFICULTIES

It is *strongly encouraged* that all required submissions to Sakai, use of Labster and electronic resources, writing formal lab reports, opening course files, etc. be done on a reliable wired (ethernet) internet connection. WI-FI is perfectly o.k. if the connection is reliable. The internet user must determine the reliability of their WI-FI.

Excuses of "technical difficulties" are generally not accepted as this syllabus is stating all students should use wired (ethernet) internet connection and/or ensure their WI-FI connection is reliable [not prone to outages]. The Lab Coordinator realizes that campus is closed and University computer labs are not accessible. Even so, students should ensure their internet connection is reliable enough to complete an online course without interruption. If an outage arises, the Lab Coordinator does reserve the right to ask for proof. The best advice the Lab Coordinator can give is to NOT complete assignments at the last minute, in order to avoid glitches with internet, since every part of the course work needs reliable internet to submit. Lab Coordinator is not responsible for technical difficulties of personal devices [phone, tablet, home/work/public wireless internet or computer]. Do not submit items in Sakai using a cell phone or a tablet device.

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. Cheating can take many forms in a lab course, but the most common forms are copying data and answers to analysis questions, sharing files for homework, completing Sakai work or other electronic content 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 lab simulation, 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; it is also entered into an individual's record. Copied answers to course work or copied formal lab reports will result in penalty for all students involved. Turn It In is utilized for formal lab reports to identify plagiarism, cheating, and other.

DISABILITY ACCOMMODATIONS

If you have a documented disability and wish to discuss academic accommodations, [discuss this with the Lab Coordinator via ZOOM](#) as soon as possible, ideally the first week of the semester. The Coordinator of Student Accessibility Center (SAC), formerly referred to as SSWD, is located 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 by the Laboratory Coordinator in a timely manner. 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, remember the University is not open. Read up on [SAC Policies and Procedures](#).

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. Students are welcome to email the Lab Coordinator at any point to voice feedback. Towards the end of the semester, students will receive an email from the Office of Institutional Effectiveness with a reminder to provide feedback on the Chem 112 course. This office will send 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 individual feedback. Feedback is not released until after the semester is over, therefore any feedback given will not impact student grades.

ADDITIONAL STUDENT RESOURCES

A considerable amount of technology is utilized in this course. Below are links of information guides in the event that students need more structured guidance on using the tools in the course in order to be successful. A link to the University Help Desk is also provided for technology questions. Students can email the Lab Coordinator, but the links below may reveal the answer more quickly when a student reads them on their own. These guides are written by the pros.

[First and Second Year Advising](#)

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

[Panopto Information](#)

[Resource Guide for Online Learning](#)

[SAKAI student guide](#)

[Success Coaching](#)

[Student Accessibility Center](#)

[Writing Center](#)

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

SYLLABUS DISCLAIMER

The Laboratory Coordinator reserves the right to revise this syllabus to correct any unintentional mistakes found at any point of the semester. Students will be notified if any changes have been made.

See the next two pages for lab's scheduled activities. The "Lecture and/or Lab Activity" column lists the day the work starts/is open OR is discussed in ZOOM. The "Activity Due Date" column lists the due date of a Forum, Labster, Tests & Quiz, Assignment, formal lab report, etc. Be mindful of due dates; they will also be listed in Sakai. Due dates are not flexible. Due dates are in Central Standard Time (CST) *regardless* of what time zone you reside in.

SEE NEXT PAGE FOR SCHEDULE OF LAB ACTIVITIES!

Tentative Chem 112 Schedule of Lectures and Activities

DAY	Lecture and/or Lab Activity/Hwk* (type) *activity opens on the registered class date	Activity/Hwk Due Date
<p>Day 1</p> <p>July 06th and 07nd</p>	<p>Intro & Syllabus Lecture Glassware & Safety Lecture</p> <p>Sakai and Labster Demo</p>	At the start of class in Day 2
<p>Day 2</p> <p>July 07th and 8th</p>	<p>Intro to Notebook Writing Req. Matter & Phase Change Lecture</p> <p>Homework: Basic Organic Chemistry Techniques (JoVE) Melting Points (JoVE) Boiling Points (JoVE) Simple Distillation (JoVE)</p> <p><i>Matter and Phase Changes: Distillation of Ethanol (LABSTER)</i></p> <p><i>Notebook Entry for Matter & Phase Change: Distil ethanol Virtual Lab Simulation (Sakai Assignments)</i></p>	At the start of class in Day 3
<p>Day 3</p> <p>July 12th and 13nd</p>	<p>High-Performance Liquid Chromatography (HPLC) Lecture</p> <p>Homework: <i>Column Chromatography 1 & 2 (JoVE)</i> <i>High-Performance Liquid Chromatography (HPLC) (JoVE)</i></p> <p><i>HPLC (LABSTER)</i></p> <p><i>Notebook Entry for HPLC virtual lab simulation (Sakai Assignments)</i></p>	At the start of class in Day 4
<p>Day 4</p> <p>July 14th and 15th</p>	<p>Scientific Writing: Lab Report Lecture Paper Chromatography – Formal report 01 Midterm Lab Experiment for Lab Report</p> <p>Homework: <i>Watch the recorded lab video on Paper Chromatography (Panopto)</i></p> <p><i>Write Formal Lab Report 01 on the Paper Chromatography Experiment (Sakai Assignments)</i></p>	At the start of class in Day 5
	Reaction Kinetics: The Essentials	

<p>Day 5 July 19th and 20th</p>	<p>Homework: <i>Temperature Dependence (JoVE)</i> <i>Concentration Dependence (JoVE)</i> <i>Determining Rate Laws and the Order of Reaction (JoVE)</i></p> <p><i>Reaction Kinetics: The Essentials (LABSTER)</i></p> <p><i>Sakai Notebook Entry for Reaction Kinetics: The Essentials virtual lab simulation (Sakai Assignments)</i></p> <p><i>Quiz on Reaction Kinetics : The Essentials (Sakai Tests & Quizzes)</i></p>	<p>At the start of class in Day 6</p>
<p>Day 6 July 21st and 22nd</p>	<p>Equilibrium Lecture</p> <p>Homework: <i>Chemical Reactions (JoVE)</i> <i>Chemical Reactions in Aqueous Solutions (JoVE)</i> <i>Le Châtelier's Principle (JoVE)</i> <i>Equilibrium (LABSTER)</i></p> <p><i>Sakai Notebook Entry for Notebook Entry for Equilibrium virtual lab simulation (Sakai Assignments)</i></p> <p><i>Quiz on Reaction Kinetics : The Essentials (Sakai Tests & Quizzes)</i></p>	<p>At the start of class in Day 7</p>
<p>Day 7 July 26th and 27th</p>	<p>Advanced Acids and Bases Lecture</p> <p>Homework: <i>Buffer (JoVE)</i></p> <p><i>Advanced Acids and Bases (LABSTER)</i></p> <p><i>Sakai Notebook Entry for Advanced Acids & Bases Labster (Sakai Assignments)</i></p> <p><i>Quiz on Advanced Acid and Based (Sakai Tests & Quizzes)</i></p>	<p>At the start of class in Day 8</p>
<p>Day 8 July 28th and 29th</p>	<p>Scientific Writing: Lab Report Lecture Buffer – Formal report 02</p> <p>Midterm Lab Experiment for Lab Report</p> <p>Homework:</p> <p><i>Watch the recorded lab video on Paper Chromatography (Panopto)</i></p> <p><i>Write Formal Lab Report 02 on the Buffer Experiment</i></p>	<p>At the start of class in Day 9</p>

	<i>(Sakai Assignments)</i>	
Day 9 Aug 2nd and 3rd	Fermentation Lecture Homework: <i>Fermentation (LABSTER)</i> <i>Fermentation Video (Panopto)</i> <i>Fermentation Video (JoVE)</i> <i>Cellular Respiration (JoVE)</i> <i>Sakai Notebook Entry for Fermentation Labster (Sakai Assignments)</i> <i>Quiz on Fermentation (Sakai Tests & Quizzes)</i>	At the start of class in Day 10
Day 10 Aug 4th and 5th	Redox Reactions Batteries Lecture Homework: <i>Redox Reactions Batteries (LABSTER)</i> <i>Galvanic Cells (JoVE)</i> <i>Redox Reactions 1 & 2 (JoVE)</i> <i>Oxidation–Reduction Reactions (JoVE)</i> <i>Oxidation Number (JoVE)</i> <i>Electrolytic Cells (JoVE)</i> <i>Sakai Notebook Entry for Redox Reactions Batteries Labster (Sakai Assignments)</i>	At the start of class in Day 11
Day 11 Aug 9th and 10th	Recrystallization Lecture Homework: <i>Recrystallization (LABSTER)</i> <i>Recrystallization Video (JoVE)</i> <i>Purifying Compounds by Recrystallization (JoVE)</i> <i>Sakai Notebook Entry for Recrystallization Labster (Sakai Assignments)</i> <i>Quiz on recrystallization (Sakai Tests & Quizzes)</i>	At the start of class in Day 12 **All Labster attempts for all virtual experiments must be completed no later than 11:59pm on Tuesday, Aug 10th
Day 12 Aug 11th and 12th	<u>LAST DAY OF CLASS</u> Wrap up Chemistry lab concepts Undergrad Research/REU/Internship Information TA Evaluation (Sakai Tests & Quizzes) All grading questions must be resolved in ZOOM Breakout Rooms during class time. Grades are final and	N/A

	put in LOCUS after students log off ZOOM.	
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Tentative schedule for Summer 2021

Month	Mon	Tue	Wed	Thu	Fri
July 2021	5 July 4 th Break No Classes	6 Intro, Syllabus, Safety/Glass, Lab/Sakai Demo Day 1	7 Intro, Syllabus, Safety/Glass, Lab/Sakai Demo & Notebook Writing, Matter and Phase Change Day 1 and 2	8 Notebook Writing, Matter and Phase Change Day 2	9
	12 HPLC and Intermolecular Forces Day 3	13 HPLC and Intermolecular Forces Day 3	14 Intro To Reports, Paper Chroma Lab synopsis Day 4	15 Intro To Reports, Paper Chroma Lab synopsis Day 4	16
	19 Reaction Kinetics Day 5	20 Reaction Kinetics Day 5	21 Chemical Equilibrium Day 6	22 Chemical Equilibrium Day 6	23
	26 Advanced Acid and Base Day 7	27 Advanced Acid and Base Day 7	28 Buffer Lab Report Talk Day 8	29 Buffer Lab Report Talk Day 8	30
Aug 2021	2 Fermentation Day 9	3 Fermentation Day 9	4 REDOX Day 10	5 REDOX Day 10	6

	9 RecrystallizationDay 11	10 RecrystallizationDay 11	11 Last Day Wrap UP, UG Research Info Day 12	12 Last Day Wrap UP, UG Research Info Day 12	13 End of Summer B term
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****All Labster attempts for all virtual experiments must be completed no later than 11:59pm on Tuesday, Aug 10th. Final grades are calculated during Day 11, therefore there is a deadline in place. Students have all semester to re-attempt the Labster simulations for a higher score, up until the date mentioned [Aug 10th].**