

Loyola University Chicago

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. Updates to the syllabus are made during the term, with a new version posted electronically, and all students will be notified.

PRINCIPLES OF BIOCHEMISTRY: CHEM 361; SUMMER I, 2024; May 20, 2024 – June 28, 2024

LIFE SCIENCE BUILDING LSB 212 Sec. 001: M, W, F: 08:20 AM – 11:10 AM; Instructor: Donald May.

Contact: dmay4@luc.edu Office: Flanner Hall 403; Office Hours: times arranged

PREREQUISITE CHEM 224/CHEM 222.

Textbook: BIOCHEMISTRY, Campbell/ Farrell, 9th ed., Brooks-Cole, Cengage Learning, 2018, 2015

Method of instruction: Lecture and discussion. Lectures may be supplemented with classroom discussion, use of molecular models, use of multimedia, and/or use of computer-based materials as well as individual and/or group problem solving.

Supplemental suggested textbook homework problems, for each chapter may be given but are not to be turned in for grading.

Discussion time may incorporate explanation of theory, review of homework questions, review of previous exam questions or completion of lecture material. Graded exams will be returned as soon as possible. Issues with graded exams must be submitted at the next lecture after being returned, otherwise scores will be considered final. Students must submit a signed statement requesting a review of the exam question(s), although the entire exam is now subject to being re-graded.

Grading: Semester grades will be determined by the following criteria: discussion handouts (lowest discussion score dropped), two unit exams and one cumulative final exam. See schedule. There are no early and no make-up exams. Graded Discussion handouts will contribute 20% toward the final grade. Anything you submit that is incorporated as part of your grade in this course must represent your own work, unless otherwise authorized. Discussion handouts must be completed: in regular #2 or HB pencil only, are expected to be neat and legible, free of scribbling/scribbled responses, incorporate correct chemical symbols (Review the Chemical Periodic Table of the Elements).

Two unit exams with the comprehensive final at 30%;

Discussion 20% + unit exams at 50% + comprehensive final exam at 30% = 100%

Course Grading System: The standards for each letter grade are listed here according to all required course components.

Letter Grades: A 89.0% A- 84.0% B+ 79.0% B 74.0% B- 68.0% C+ 63.0% C 58.0% C- 53.0% D 45.0% F < 45%

Each student will receive a midterm grade via LOCUS, prior to the Withdraw deadline for the semester.

Grades are only based on the criteria listed in the syllabus: no substitutions, and no additions.

Grading Scheme:

GRADED DISCUSSIONS 20%;

TWO UNIT EXAMS 50%

FINAL EXAM 30%*

***the final exam is mandatory to earn a passing grade**

Total score 100%

Students must bring and present their Loyola I.D. for each exam. Exams may not be distributed to students without proper ID.

Students are not allowed to leave during exams. If you leave, you must turn in your exam and you will be considered finished with the exam. Students must turn in all exam pages when finished. Exams cannot be taken: see Academic Integrity Violations.

No early and no make-up in-class exams; No make-up final exams will be given. No make-up discussion handouts. See attached schedule. Students are not allowed to leave during exams. If you leave, you must turn in your exam, and you will be considered finished with the exam. Students must turn in all exam pages when finished. Exams cannot be taken from lecture: see Academic Integrity Violations. **Posting of Grades: Final course grades are posted only LOCUS.**

Student Conduct: Only students officially enrolled may attend: students must attend the section for which they are officially enrolled. At all times students are expected to conduct themselves in a mature and professional manner, which includes but is not limited to: treating everyone in class with courtesy and respect, avoidance of extraneous comments and small group discussions during lecture. Eating, chewing gum/tobacco products and drinking (food items) are not allowed. Students are expected to take care of their personal/professional matters before lectures/discussions/exams. Additionally radios, headphones, cell-phones or similar devices must be in silent mode and are not permitted during lectures/discussions/exams. If a cell phone rings (beeps, buzz, etc.) during discussions or lectures, the student will be asked to leave. Not all contingencies can be listed but inappropriate conduct will be addressed. If a cell phone rings (beeps, buzz, etc.) during any exam, the exam will be collected and the student will not be allowed to continue, since this constitutes using an outside resource. Students are expected to take care of any professional/personal issues before the exams. Students are not allowed to leave the room during exams until their exam is handed in for grading. If you leave, you must turn in your exam and you will be considered finished. Please keep noises and sounds to a minimum. When leaving, be respectful and leave quietly. During exams, only religious caps/ hats/hoods are allowed: nonreligious caps, hats, hoods, visors and so forth, will not be allowed to be worn during exams. All personal materials, besides pencils, calculators and erasers, will be put away. Other exam instructions will be given and thus it is expected that students will be on time and ready for the start of the exam. The visual or audio recording of the lectures and discussions is not allowed generally but exceptions can be made for extraordinary circumstances. For any missed lecture, students will need to get the lecture notes from a classmate. **SI information: There may be available a Supplemental Instruction (SI) study sessions available for this course. SI sessions are led by an SI leader, _____, who is a student that has recently completed a CHEM 361 course. Session attendance is open to all, and is voluntary. Times and locations for the SI session can be found here: www.luc.edu/tutoring. Students who attend these interactive sessions find themselves working with peers as they compare notes, demonstrate, and discuss pertinent problems and concepts, and share study and test-taking**

strategies. Research shows students who regularly attend sessions, develop a better understanding of course concepts than those who do not. Students are asked to arrive with their Loyola ID number, lecture notes, and textbook.

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).

Academic Dishonesty also includes, but is not limited to, such infractions as:

- Obtaining a copy of tests or scoring devices
- Using another student's answers during an examination
- Providing another student questions or answers to or copies of examination questions
- Having another person impersonate the student to assist the student academically
- Impersonating another student to assist the student academically
- Representing as one's own work the product of someone else's creativity
- Using, or having available for use, notes or other unpermitted materials during "closed book" examinations
- Duplicating any portion of another student's homework, paper, project, laboratory report, take-home examination, electronic file or application for submission as accepting a copy of tests or scoring devices
- Having someone other than the student prepare any portion of the student's homework, paper, project, laboratory report, take-home examination, electronic file or application, other than for a teacher-approved collaborative effort.
- Permitting another student to copy any portion of another student's homework, paper, project, laboratory report, take-home examination, electronic file or application other than for a teacher-approved collaborative effort
- Using any portion of copyrighted or published material, including but not limited to electronic or print media, without crediting the source
- Any other action intended to obtain credit for work that is not one's own.

Course Practices Required: Attending all lectures and discussions on time; College-level writing skills on exams; Communication skills for discussion and articulation of questions; Completion of homework and reading assignments. It is recommended that the student read through each chapter before lecture and eventually work through the suggested problems.

Learning Objectives: Course introduces bio-molecule monomers, macromolecules, and processes found in living organisms. Content includes structures of amino acids, nucleotides, lipids, and sugars; corresponding macromolecular structures, i.e., proteins, nucleic acids, membranes, and polysaccharides as related to their biological functions; kinetics and mechanism of enzymatic reactions, the central metabolic pathways, the genetic code and developments in biotechnology. Students who successfully complete this course will be able to do the following, at an acceptable level (including but not limited to): Identify and describe biomolecules including carbohydrates, amino acids/proteins and nucleotide/nucleic acids, lipids/lipid bilayer constituents; Choose appropriate buffer system; calculate the ratios of weak acid to conjugate base; determine the pKa from the associated titration curve; Show the major form of an amino acid/polypeptide including the zwitterion, at different pH values; track the fate of an oxygen molecule from inhalation in the lungs, track the fate of a carbon dioxide molecule produced from the TCA cycle, identify the kinetics of an enzymatic process; identify the substrates, enzymes and products in both catabolic and anabolic metabolism; track the fate of pyruvate and acetyl-CoA through the TCA cycle; track the fate and path of two high-energy electrons through the electron transport complexes/respiratory chain, in conjunction with the Chemiosmotic principle of proton translocation utilized in oxidative phosphorylation to synthesize ATP.

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

The instructor reserves the right to modify any and all of the course requirements at any time, including exam dates, course %-grade correlation, order of chapters/topics covered.

Student Conduct:

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:

(<https://www.luc.edu/returntocampus/classroomscenarios/>)

Academic Calendar, • A link to the official Loyola calendar can be found here: <https://www.luc.edu/academics/schedules/>

Course Repeat Rule Effective with 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: <http://www.luc.edu/chemistry/forms/> and obtain a signature from 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.

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/athletheadvising/attendance.shtml>)

Students who will miss class for an academic competition or conference must provide proper documentation to their instructor as early in the semester 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 5 calendar days of the first class meeting of the semester to request special accommodations, which will be handled on a case by case basis.

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/>

Classroom Masking Policy We will follow all University guidance and requirements for masking, including any updates made during the semester. 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, we will be respectful of anyone who wears a mask in the classroom.

Other Items

- A link to the official Loyola calendar can be found here: <https://www.luc.edu/academics/schedules/>
- The Withdraw deadline for the semester is on Friday, JUNE 21, 2024.
- Loyola is using SmartEvals to provide instructor & course feedback. OIE will send emails near the end of the term.

In general lecture, meetings 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. For the SUMMER I 2024 semester, students are able to convert a class to “Pass/No-Pass” or “Audit” through May __, 2024. Students must submit a request for Pass/No-Pass or Audit to their Academic Advisor.

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Final Exam: The University sets the schedule for all final exams. **FRIDAY, JUNE 28th, START TIME 08:20 AM**
Location will be in the regular lecture room _____. You will have exactly 1.5 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. Instructors may not reschedule final exams for a class for another day and/or time during the final exam period. There can be no divergence from the posted schedule of dates for final exams. Individual students who have four (4) final examinations scheduled for the same date may request to have one of those exams rescheduled. If a student reports having four final examinations scheduled for the same date, students should be directed to e-mail a petition to Adam Patricoski, Assistant Dean for Student Academic Affairs, CAS Dean’s Office (apatricoski@luc.edu).

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: the single lowest score for a graded discussion and for a unit exam, including any single missed graded discussion handout or graded unit exam will be dropped. You may provide documentation for an absence, but it is not required. These accommodations are automatically available to all students.

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. For the SUMMER I 2024 semester, students are able to convert a class to “Pass/No-Pass” or “Audit” through May __, 2024. Students must submit a request for Pass/No-Pass or Audit to their Academic Advisor.

Class Recording & Content Information

The last part of lecture days will be utilized often for discussion, which will start with about 20-25 minutes remaining. This will allow students to clarify questions from homework, previous lecture material and so forth.

Graded discussion handouts may also be given. Lectures will incorporate 50 minutes of time followed with a 10 minute break. Exams will generally cover all material up to and including material from all the previous lecture. All exams will begin promptly at the start of class and will be 50 minutes in duration. Lectures subsequent to exams will then continue 10 minutes after the completion of each unit exam. The lecture on Wednesday, June 26, 2024 will be a full lecture. The final unit exam can include previous topics and will be 1.5 hours in duration.

**Lecture and Exam Outline (tentative / possibly subject to change) Principles of Biochemistry Lecture, Chemistry 361 001.
 SUMMER I 2024 Life Science Building LSB 212 Sec. 001: M, W, F: 08:20 AM – 11:10 AM.
 MAY/JUNE**

Monday	Tuesday	Wednesday	Thursday	Friday
20 CHP 02	21	22 CHP 03	23	24 CHP 04 GRADED DISCUSSION
27 <u>NO CLASS</u> <u>MEMORIAL DAY</u> <u>HOLIDAY</u>	28	29 CHP 06	30	31 <u>EXAM I</u> CHP 05, CHP 07
03 CHP 07	04	05 CHP 08	06	07 CHP 16 GRADED DISCUSSION
10 CHP 17	11	12 CHP 19	13	14 <u>EXAM II</u> CHP 15, CHP 20

JUNE

Monday	Tuesday	Wednesday	Thursday	Friday
17 CHP 20 MIDTERM GRADES LOCUS	18	19 <u>NO CLASS</u> <u>HOLIDAY</u>	20	21 CHP 18 “W” Day
24 CHP 23	25	26 CHP 21	27	28 <u>FINAL</u> <u>EXAM</u>