


SYLLABUS

Department Name: Natural Sciences
 Course Number: Chem 4100
 Course Title: **Biochemistry**
 Units: 3 units
 Semester offered: **Summer**
 Modality: Hybrid –  **YouTube** (self-paced) video tutorial lectures
 3 in person exams - **Meadowlands 333**

Course Meeting Time: Exam days only - 10:00 am
 Course Meeting Days: Exam days, 7/9, 7/22, 8/1
 Course Meeting Place: **Meadowlands 333**

Prerequisites: General Chemistry I (Chem 2000)
 General Chemistry II Chem 2100
 Organic Chemistry I (Chem 3800)

Instructor Information:

Name: Tyler Johnson, PhD
 Office Phone: 415-482-1983

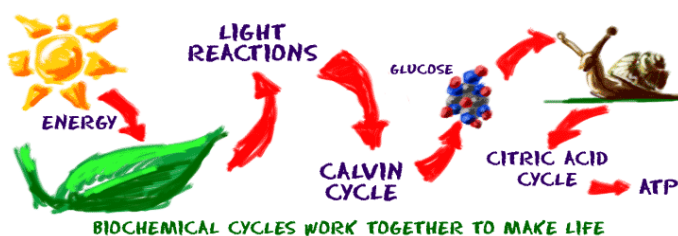
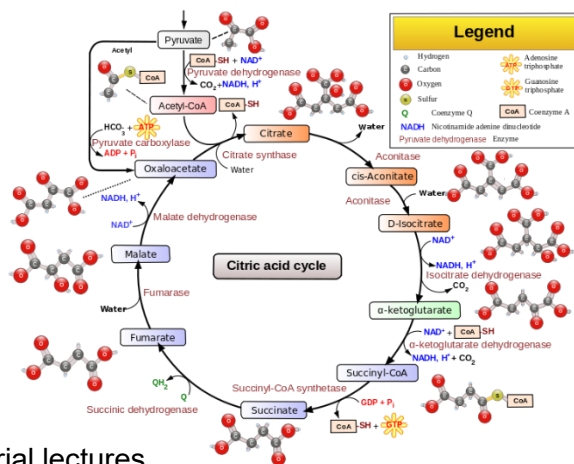
Office Hours: Tuesday, Thursday 12:00-1:00 pm (in person or by Zoom)
Office Location: 128 Science center or by Zoom

e-Mail Address: tyler.johnson@dominican.edu

web: <http://moodle.dominican.edu/> Login → Chem4100

Teaching Assistant (TA): Matt Nickel – matthew.nickel@students.dominican.edu

If anything is unclear to you - please **Reach out – we're all here to HELP STUDENTS** 😊



DESCRIPTION OF SYLLABUS CONTENTS

1. Course Description: General Content of the Course. An interdisciplinary coverage of Biochemistry I. Chemistry of carbohydrates, lipids, proteins, nucleic acids, vitamins, and hormones, with major emphasis on biochemical processes in human cells. This class also covers enzyme kinetics, energetics of metabolic reactions and molecular biochemistry

2. General Education or Major Requirements Satisfied by the Course:

This course satisfies the requirements for a biology or chemistry degree at Dominican University of California. This course is designed for majors that also want to include a pre-medicine (pre-med) emphasis and is transferable to the California State University (CSU) and University of California (UC) systems.

This syllabus is subject to modification. The instructor will inform students of any changes.

3. Learning Outcomes

This course satisfies the following Chemistry Program Learning Outcomes:

PLO 1. Students will comprehend and integrate the fundamental scientific concepts and laboratory skills in the chemical and physical sciences.

PLO 3. Students will demonstrate effective communication skills in written presentations of scientific research

PLO 3. Students will develop the skills and knowledge to become ethical practitioners of science.

PLO 5. Students will demonstrate readiness for further study or employment in discipline related areas.

This course will also allow students to acquire the following institutional learning outcomes

ILO 1 Exploration and Acquisition of Knowledge

ILO 2 Development of Intellectual, Professional, and Artistic Skills

4. Required Text & Materials: Lehninger - Principles of Biochemistry, 4th Edition, **ISBN-13: 978-0716743392**
Scientific calculator (without memory functions) for use on exams. A copy of the text is on reserve in library.

5. Library Support: Library Liaison: Amy Gilbert, amy.gilbert@dominican.edu, 415-257-1329

6. Online Components of the Course. Moodle website: <http://moodle.dominican.edu/>

7. Academic Honesty Honor Code. Students are expected to adhere to the Academic Honesty Honor Code stated in the [Catalog](#). Students should practice academic integrity in all of its forms, including abstaining from plagiarism, cheating, and other forms of academic misconduct. The University reserves the right to determine in any given instance what action constitutes a violation of academic honesty and integrity.

Our course policy on cheating involves the following guidelines which include:

1) Any student caught using a: a) graphing calculator, b) smart phone, c) smart watch or d) unauthorized supplementary device during an exam will receive a 0.

2) Students are encouraged to use the restroom prior to each 70 minute exam. Students may not be allowed to use the restroom during a 70 minute exam. Professional notes from a physician will be an exception.

3) No make up exams will be provided. Students missing an exam can take the weighted average score of their scores from two of the three exams given if they miss an examination.

If more than one exam is missed by a student, they may be advised to *withdraw* from the course.

Make up exams will be proctored by a faculty or staff member and if one is not available the student will take the make up exam under video surveillance. **Individual circumstances will be evaluated at the instructor and the NSM department chair's discretion.** The above guidelines have been set in place to create democracy and equity for everyone in the classroom. Please do not take them personally, just take them seriously.

8. Diversity

Dominican University of California is committed to promoting diversity. In recognition of our diverse backgrounds, the inclusion of diverse thought is encouraged in this course and in all classroom interaction. In addition, in this course, an effort will be made to provide a learning environment which is conducive for all students.

9. Assignments

Students are expected to read ahead in the textbook based on the tentative schedule. Assignments include homework and in-class worksheets. In-class exams will also be administered.

Homework. There will be no homework. There will just be suggested questions and problems sets from each chapter from the book covered in lecture. You are advised to have mastery of these worksheets.

IMPORTANT NOTE:

Working problems is essential to learning biochemistry. It'll be difficult for you to solve problems on exams if you do not **PRACTICE** working similar problems while you are studying. Keeping all of your worked-out problems in an organized folder provides the foundation for review material involving our exams.

10. Grading:

Exam 1	200 pts
Exam 2	200 pts
Exam 3	200 pts
Total	600 pts

93-100%	A
90-92%	A-
87-89%	B+
83-86%	B
80-82%	B-
77-79%	C+
73-76	C
70-72	C-
60-69%	D
< 59%	F

NOTE: We structured this course to simulate preparative courses that prepare students for the: a) Optometry Admissions Test (OAT), b) Dental Admissions Test (DAT) or c) Medical College Admissions Test (MCAT). After taking these entrance exams (a-c), students are not provided their exams or able to view which question(s) they missed. They are provided their percentile score overall out of 100%. Similarly, our exams will not be passed back to students. Exam scores will be emailed to each student. Students can view the question(s) they missed on our exams during office hours in person with their instructor. Exams will be drawn from approximately ~85% Worksheets questions with ~15% drawn from new but related material.

11. Expectations for Students

Please turn off cell phones during class and practice respect for your fellow students and the instructor. Texting friends and family during class can be distracting to your fellow students and instructor. Materials posted to the course web site are only for class use and may not be duplicated and distributed or sold. Students may download and print information for personal use as a student in the class. This is consistent with Fair Use under intellectual property protection. Expect to spend a minimum of three hours outside of class for every one hour of class. Students must come to class on time and attend all lectures. Teamwork is essential and encouraged on class assignments 😊, **however** completing assignments is the responsibility of each student.

PRIOR TO EACH LECTURE – PLEASE READ THE OUTLINED CHAPTERS IN OUR TEXT (see page 4)

12. Students Who Require Accommodations:

Dominican University of California is committed to equal access for all students in accordance with the American's with Disabilities Act of 1990. Students who feel they may need accommodations based on the impact of a disability should contact the Office of Accessibility and Disability Services at 415-257-1388 asap to discuss specific accommodations. Please submit the subsequent paperwork to the instructor asap.

13. Course Evaluations Dominican University of California is committed to an ongoing evaluation of its programs and courses through a culture of constructive dialogue and feedback. It is expected that students will complete the course evaluation either in class or outside of class. The instructor will determine time for the course evaluation to be completed. A link to the course evaluation will be sent to all the students enrolled in the class by the IT Department. The evaluation may be completed on a laptop, tablet, or mobile device. A laptop can be checked out from the library if needed.

14. Title IX

As instructors, one of our responsibilities is to help create a safe learning environment for our students and for the campus as a whole. As part of our commitment to students' well being, we have the responsibility to report any instances of sexual harassment, sexual violence, relationship violence, or stalking to our Title IX Coordinator, so they can inform students about their reporting options and the various support resources available. Student privacy is a priority for us and will be maintained to the extent permissible by law and policy. For more information about your rights and reporting options, including confidential and anonymous reporting, please visit dominican.edu/titleix.

15. Disclaimer This syllabus is subject to modification. The instructor will inform students of changes.

16. TENTATIVE Lecture Class Schedule – We reserve the right to adjust accordingly.**Textbook:** Lehninger - Principles of Biochemistry, 4th Edition, ISBN-13: 978-0716743392

Date	Lecture	Content	Chapter
June 30	1a	Water and Acids/Bases (review)	2
	1b	Water and Acids/Bases (review)	2
	2	pH, pKa and Buffers (review)	2
July 1	3	Buffers & Amino Acids (review)	2
July 1	4	Amino acids	3
July 2	5	Peptides & proteins	3
July 3	6/7	Protein structure & purification	4
July 4		HOLIDAY	
July 7	7	Protein structure & purification	4
July 8	8	Exploring proteins	4
July 9		Exam 1 (Lectures 1-8)	2-4
July 10	9	Exploring proteins	5
July 11	10	Enzymes & review of thermodynamics	5/6
July 14	11	Enzyme kinetics - Michaelis Menten	6
July 15	12	Enzyme kinetics - Michaelis Menten	6
July 16	13	Enzyme kinetics – Regulation	6
July 17	14	Examples of Enzyme Regulation	6
July 18	15	Carbohydrates	7
July 21	16	Carbohydrates	7
July 22		Exam 2 (Lectures 9-16)	5-7
July 23	17	Glycobiology	7
July 24	18	Nucleotides and Nucleic acids	9
July 25	19	DNA & RNA	9
July 28	20	DNA based information technologies	8
July 29	21	Lipids	10
July 30	22	Biological membranes & transport	11
July 31		Review / Study day	7-11
Aug 1		Exam 3 (Lectures 17-22)	7-11
		NOTE: We'll finish by covering " Part I " as designated in Lehninger Biochemistry. Part II can be covered in Biochemistry II	

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Tentative Calendar for Summer Biochemistry

JULY 2025

SUN	MON	TUES	WED	THURS	FRI	SAT
29	30 Lect 1 & 2 (review)	1 Lect 3 & 4 (review) O.H. 12-1pm	2 Lect 5	3 Lect 6 O.H. 12-1pm	4 Holiday 😊	5
6	7 Lect 7	8 Lect 8 O.H. 12-1pm	9 Exam 1	10 Lect 9 O.H. 12-1pm	11 Lect 10	12
13	14 Lect 11	15 Lect 12 O.H. 12-1pm	16 Lect 13	17 Lect 14 O.H. 12-1pm	18 Lect 15	19
20	21 Lect 16	22 Exam 2 O.H. 12-1pm	23 Lect 17	24 Lect 18 O.H. 12-1pm	25 Lect 19	26
27	28 Lect 20	29 Lect 21 O.H. 12-1pm	30 Lect 22	31 Lect 23 O.H. 12-1pm	1 Exam 3	2