

Master Course Syllabus

For additional course information, including prerequisites, corequisites, and course fees, please refer to the Catalog: <https://catalog.uvu.edu/>

Semester: Spring

Course Prefix: BIOL/Chem

Course Title: Biological Chemistry

Year: 2025

Course and Section #: 3600-X02

Credits: 3

Course Description

Introduces principles of the chemical processes that define living organisms. Covers structure and function of proteins, carbohydrates, lipids and nucleic acids. Explores metabolic pathways, biosynthesis, enzymatics, thermodynamics, membrane dynamics and related processes within a living cell. Emphasizes molecular mechanisms of reactions and their outcome.

Course Attributes

This course has the following attributes:

- General Education Requirements
- Global/Intercultural Graduation Requirements
- Writing Enriched Graduation Requirements
- Discipline Core Requirements in Program
- Elective Core Requirements in Program
- Open Elective

Other: *Click here to enter text.*

Instructor Information

Instructor Name: Dr Craig Thulin

Student Learning Outcomes

Upon successful completion of this course, students will be able to:

Analyze the fundamentals of biochemistry in the world around them.

Identify biomolecules, including carbohydrates, lipids, and proteins, and their roles in the fundamental biochemical pathways, including metabolic pathways.

Evaluate the relevance of biochemistry to human concerns, including the health sciences and other fields of chemistry.

Explain the relationship of biochemistry to both biology and chemistry

Course Materials and Texts

You will need access to the internet, including a device with a microphone and camera for taking the exams through Proctorio.

You will also need access to the textbook, *Biochemistry*, Berg, Tymoczko & Stryer, 9th or 10th edition.

Course Requirements

Course Assignments, Assessments, and Grading Policy

The following grading standards will be used in this class:

Grade Percent

A 93-100

A- 90-92

B+ 87-89

B 83-86

B- 80-82

C+ 77-79

C 73-76

C- 70-72

D+ 67-69

D 63-66

D- 60-62

E 0-59

Scores will not be rounded

Assignment Categories contribute the the

Activity Percent

Practice Proctorio 1

Course Surveys 3

Virtual Meetings 4

DCQ's 4

Quiz Questions 8

Peer reviews 8

Discussions 7

Midterm Exams 45

Final Exam 20

Required or Recommended Reading Assignments

Biochemistry, Berg, Tymoczko & Stryer, 9th or 10th edition, chapters 1-3, 7-13, and 15-27

General Description of the Subject Matter of Each Lecture or Discussion

Module	Virtual Teams Meetings	Assignments
Module 1 Overview	1/9 12:00-12:30am OR 1/9 5:00-5:30pm	DCQs 1-1 to 1-7 Real-Life-ation Discussion Submit Quiz Questions Course Start Survey
Module 2 Proteins I	TO BE SCHEDULED	DCQs 2-1 to 2-12 Real-Life-ation Discussion Submit Quiz Questions Peer Review Quiz Questions Proctorio Practice Test
Module 3 Proteins II	TO BE SCHEDULED	DCQs 2-13 to 3-13 Real-Life-ation Discussion Submit Quiz Questions

Module	Virtual Teams Meetings	Assignments
		Peer Review Quiz Questions
Module 4 Globins	TO BE SCHEDULED	DCQs 7-1 to 8-13 Real-Life-ation Discussion Submit Quiz Questions Peer Review Quiz Questions Exam 1
Module 5 Enzymes & Mechanisms	TO BE SCHEDULED	DCQs 9-1 to 10-6 Real-Life-ation Discussion Submit Quiz Questions Peer Review Quiz Questions
Module 6 Regulation & Carbohydrates	TO BE SCHEDULED	DCQs 10-7 to 11-8 Real-Life-ation Discussion Submit Quiz Questions Peer Review Quiz Questions
Module 7 Lipids & Membranes	TO BE SCHEDULED	DCQs 12-1 to 15-5 Real-Life-ation Discussion Submit Quiz Questions Peer Review Quiz Questions
Module 8 Introduction to Metabolism	TO BE SCHEDULED	DCQs 15-6 to 16-13 Real-Life-ation Discussion Submit Quiz Questions Peer Review Quiz Questions Exam 2
Spring Break	None	None
Module 9 Carbohydrate Catabolism	TO BE SCHEDULED	DCQs 17-1 to 18-6 Real-Life-ation Discussion Submit Quiz Questions Peer Review Quiz Questions
Module 10 CAC, ETC, & OP	TO BE SCHEDULED	DCQs 18-7 to 19-8 Real-Life-ation Discussion Submit Quiz Questions Peer Review Quiz Questions
Module 11 Photosynthesis & Anabolism	TO BE SCHEDULED	DCQs 20-1 to 21-7 Real-Life-ation Discussion Submit Quiz Questions Peer Review Quiz Questions Exam 3
Module 12 Energy Storage	TO BE SCHEDULED	DCQs 22-1 to 23-8 Real-Life-ation Discussion Submit Quiz Questions Peer Review Quiz Questions

Module	Virtual Teams Meetings	Assignments
Module 13 Amino Acid Metabolism	TO BE SCHEDULED	DCQs 23-9 to 25-6 Real-Life-ation Discussion Submit Quiz Questions Peer Review Quiz Questions
Module 14 Nucleotide & lipid metabolism	TO BE SCHEDULED	DCQs 25-7 to 27-4 Real-Life-ation Discussion Submit Quiz Questions Peer Review Quiz Questions
Module 15 Integration	none	DCQs 27-5 to 27-8 Real-Life-ation Discussion Submit Quiz Questions Peer Review Quiz Questions
Module 16 Finals		Final Exam

Required Course Syllabus Statements

Generative AI

This course requires you to complete assignments that assess your understanding, application, and problem-solving ability applied to the subject matter. You are expected to do your own work. Problem solving and scientific thinking are tools that are necessary for students to learn in this course. The use of artificial intelligence (AI) tools, such as chatbots, text generators, paraphrasers, summarizers, or solvers, is strictly prohibited for any part of your assignments. Using these tools will be considered academic dishonesty and will be handled according to the university's academic honesty policy. If you have questions about acceptable use of AI tools, please consult the instructor before submitting your work.

Using Remote Testing Software

This course does not use remote testing software.

This course uses remote testing software. Remote test-takers may choose their remote testing locations. Please note, however, that the testing software used for this may conduct a brief scan of remote test-takers' immediate surroundings, may require use of a webcam while taking an exam, may require the microphone be on while taking an exam, or may require other practices to confirm academic honesty. Test-takers therefore shall have no expectation of privacy in their test-taking location during, or immediately preceding, remote testing. If a student strongly objects to using test-taking software, the student should contact the instructor at the beginning of the semester to determine whether alternative testing arrangements are feasible. Alternatives are not guaranteed.

Required University Syllabus Statements

Accommodations/Students with Disabilities

The Americans with Disabilities Act (ADA) and Section 504 of the Rehabilitation Act of 1973, as amended, prohibit Utah Valley University from engaging in discrimination on the basis of disability in any program or activity. Discrimination is also prohibited in all aspects of employment against

persons with disabilities who, with reasonable accommodation, can perform the essential functions of a job.

Students who believe they have been denied program access or otherwise discriminated against because of a disability are encouraged to initiate a grievance by contacting the Accessibility Services Director, Sherry Page at 801-863-8747. Employees can contact the ADA Coordinator, Irene Whittier at 801-863-8389.

Upon request, this information is available in alternative formats, such as mp3, Braille, or large print. To request this format, email asd@uvu.edu (<mailto:asd@uvu.edu>) .

Accessibility Services Statement

Students needing accommodation due to a disability including temporary and pregnancy accommodations may contact the UVU Accessibility Services at accessibilityservices@uvu.edu or 801-863-8747. Accessibility Services is located on the Orem Campus in LC 312.

Academic Integrity

At Utah Valley University, faculty and students operate in an atmosphere of mutual trust. Maintaining an atmosphere of academic integrity allows for free exchange of ideas and enables all members of the community to achieve their highest potential. Our goal is to foster an intellectual atmosphere that produces scholars of integrity and imaginative thought. In all academic work, the ideas and contributions of others must be appropriately acknowledged and UVU students are expected to produce their own original academic work.

Faculty and students share the responsibility of ensuring the honesty and fairness of the intellectual environment at UVU. Students have a responsibility to promote academic integrity at the university by not participating in or facilitating others' participation in any act of academic dishonesty. As members of the academic community, students must become familiar with their **rights and responsibilities**

(<https://policy.uvu.edu/getDisplayFile/5bedd0ef7b23736d542192e3>) . In each course, they are responsible for knowing the requirements and restrictions regarding research and writing, assessments, collaborative work, the use of study aids, the appropriateness of assistance, and other issues. Likewise, instructors are responsible to clearly state expectations and model best practices.

Further information on what constitutes academic dishonesty is detailed in **UVU Policy**

541: Student Code of Conduct

(<https://policy.uvu.edu/getDisplayFile/5bedd0ef7b23736d542192e3>) .

Equity and Title IX

Title IX states that no person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity receiving Federal financial assistance. Students who believe they have been excluded from participation in, denied the benefits of, or discriminated against because of their sex may contact the EO/AA office to make a report, ask questions, or share concerns by email at:

titleix@uvu.edu, in-person at BA-203, or by phone at: (801) 863-7999. To learn more about the

Equity and Title IX office please visit us online at: <https://www.uvu.edu/equityandtitleix/>

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Religious Accommodation

UVU values and acknowledges a wide range of faiths and religions as part of our student body, and as such provides accommodations for students. Religious belief includes the student's faith or conscience as well as the student's participation in an organized activity conducted under the auspices of the student's religious tradition or religious organization. The accommodations include

reasonable student absences from scheduled examinations or academic requirements if they create an undue hardship for sincerely held religious beliefs. For this to occur, the student must provide a written notice to the instructor of the course for which the student seeks said accommodation prior to the event.

The UVU campus has **a place for meditation, prayer, reflection, or other forms of individual religious expression** (<https://www.uvu.edu/interfaith/reflectioncenter/index.html>) as is described on their website.