

CHEM 3511 Syllabus

Survey of Biochemistry, Summer 2026

Tue and Thur, 12:30 – 14:40 PM, MoSE G011

Instructors Information

Dr. Bruno Di Geronimo Email* bgeronimo3@gatech.edu Office Hours: Fridays 2:30 – 5:30 PM

[§]Office hours are for answering questions on the lecture/reading materials, for going over end of chapter problems, and for any other questions/discussions related to the course. Attending office hours is optional. Office hours and recitations will be held both presential and virtually, with the Zoom links provided on Canvas.

General Information

Description

Survey of Biochemistry is a 3-credit course on the structure, function, reactivity, and analysis of biological small molecules and macromolecules.

Pre-Requisites

Students are expected to remember and comprehend fundamentals of organic chemistry in order to be successful in this course. Prerequisites: CHEM 1315: Survey of Organic Chemistry or CHEM 2312: Organic Chemistry II or CHEM 2313: Bioorganic Chemistry

Is CHEM-3511 or CHEM-3521 the Right Fit for You?

Please keep the following in mind as you plan your semester:

- **Fast vs. Measured Pace:** CHEM-3511 is an intensive survey course, and will cover approximately one chapter per lecture. CHEM-3521 is the first of two parts of an in-depth biochemistry course, and will cover approximately one chapter per week.
- **For Pre-Health Students:** If you are on a pre-med or pre-health track, please be aware that many medical schools require the two-semester Biochem I / Biochem II sequence. This single-semester CHEM-3511 survey course may not fulfill that requirement.
- **MCAT Prep:** The two-semester Biochem I / Biochem II sequence is more in-depth and provides stronger preparation for the MCAT than the one semester Survey course. We highly recommend confirming this course aligns with your long-term academic and career goals.

Course Goals and Learning Objectives

By the end of this course, students will be able to:

- Characterize the structure of biological macromolecules.
- Describe the role of biological molecules in nature, including biologically relevant small molecules.
- Examine chemical reactions involved in metabolic processes.
- Explain the strengths and weaknesses of experimental methods used to investigate biological macromolecules.

Materials Needed

Access to Canvas – for class information, exams, and reading quizzes. Calculator for quizzes and exams.

Text: *Essential Biochemistry* by Pratt and Cornely, 5th edition (3rd and 4th editions are ok).

Weighting of Graded Components

10% Reading Quizzes

20% Homework Assignments

40% Midterm Examinations (3 total, lowest midterm grade will be dropped, please note that **a nullified exam by OSI will not count as a drop**)

30% Final Examination

All assessed components will be available through Canvas (Reading Quizzes and Midterm/Final Examinations will be available under "Quizzes", Homework Assignments under "Assignments")

Late Submissions

Note that **no late submissions will be accepted for Homework assignments or reading quizzes**. This is because solutions are released after the due date. I have given you 2-week deadlines on all homework (after the corresponding chapter has been covered in class) instead of 1 to allow for everyone to have time to submit. Please make sure you submit your assignments before the due date. Please note that the final reading quiz and homework assignment have a slightly shorter deadline so you can get the solutions in good time to study ahead of the final exam.

Makeup Opportunities

Please note that as you can drop one Midterm exam without penalty, **there will be no makeup opportunities on the Midterm or the Final exam**.

Grading Scale

A = 90-100% B = 80-89% C = 70-79% D = 60-69% F = <60%

Exam Dates and Location

Midterms: Tuesday, January 28; Thursday, Feb 20; Thursday, April 1. **Final Exam: Tuesday May 5 at 2:40 - 5:30pm**. Midterms will be held in class during regularly scheduled hours, the final will be held in class at the GT scheduled time. For exam room availability reasons, if you have an ODS accommodation for extra time on your graded assignments, please plan to use the testing center. This will ensure that you get your full extension without distractions. For details see <https://disabilityservices.gatech.edu/testing-center/scheduling>

Info on Homework and Reading Quizzes

- Homework problems (one each chapter, 10 questions and only 3 attempts) will be made available on Canvas. Come to Recitation Hours with our class teaching assistants (see above) for help on end of chapter problems and to check your answers.
- Reading quizzes (one each chapter, 10 questions, 1 attempt, 15 mins) will be on Canvas and will have a time limit, so do not start a quiz until you have finished reading the entire chapter. Working together on quizzes is **not** allowed. Reading quizzes have similar format to midterm and final exams, and therefore will be useful for preparing you for the exams.

Course Schedule (tentative and subject to change based on how the course progresses)

Tu May 19: Ch. 1-3, Aqueous Chemistry, Nucleic Acid Structure and Function

Th May 21: Ch. 4, Protein Structure

Tu May 26: Ch. 5, Protein Function

Th May 28: Midterm Exam 1 (Covering chapters 1 – 5)

Tu June 2: Ch. 6, How Enzymes Work

Th June 4: Ch. 7, Enzyme Kinetics and Inhibition

Tu June 9: Ch. 8, Lipids and Membranes

Th June 11: Ch. 9, Membrane Transport

Tu Jun 16: Midterm Exam 2 (Covering chapters 6 – 9)

Th June 18: Ch. 10, Signaling
Tu June 23: Ch. 11, Carbohydrates
Th June 25: Ch. 12 Metabolism and Bioenergetics
Tu June 30: Ch. 13, Glucose Metabolism (Part 1)
Th July 02: Ch. 13, Glucose Metabolism (Part 2)

Tu Jul 7: Midterm Exam 3 (Covering chapters 10 – 13)

Th July 9: Ch. 14, The Citric Acid Cycle (Part 1)
Tu July 14: Ch. 14, The Citric Acid Cycle (Part 2)
Th July 16: Ch. 15, Oxidative Phosphorylation
Tu July 21: Ch. 15, Oxidative Phosphorylation

Th July 23: *Flexible / Review Lecture* – Final Instructional Day, No New Material

PENDANT to decide Final Exam, at XX:XX – XX:XX (Covering Chapters 1 – 15)

Georgia Tech Academic Honor Code

For Graded Homework Assignments: You may work with others in developing approaches to solve problems, but submitted work must be your own.

Students are reminded of the obligations and expectations associated with the Academic Honor Code and Student Code of Conduct, available online at:

<https://policylibrary.gatech.edu/student-life/academic-honor-code>

<https://policylibrary.gatech.edu/student-life/student-code-conduct>

For any questions involving these policies, please discuss them with the instructors.

Any student suspected of cheating or plagiarizing on a quiz, exam, or assignment will be reported to the Office of Student Integrity, who will investigate the incident and identify the appropriate penalty for violations.

Student-Faculty Expectations Agreement

At Georgia Tech we believe that it is important to strive for an atmosphere of mutual respect, acknowledgement, and responsibility between faculty members and the student body. See <http://www.catalog.gatech.edu/rules/22/> for an articulation of some basic expectation that you can have of me and that I have of you. Note that this document is not intended to be either comprehensive or limiting in regard to the Institutes' statutes. In the end, simple respect for knowledge, hard work, and cordial interactions will help build the environment we seek. Therefore, I encourage you to remain committed to the ideals of Georgia Tech while in this class.

Office of Disability Services

Students with disabilities who require reasonable accommodations to fully participate in course activities or meet course requirements are encouraged to register with the Office of Disability Services (ODS), which collaborates with students, faculty and staff to create a campus environment that ensures all students have an equal opportunity to access the Georgia Tech Community. ODS collaborates with students, faculty, and staff, to find creative solutions and reasonable accommodation to address any academic, physical, technological or other barriers on campus. More information about ODS and their services can be found at the following link: <https://disabilityservices.gatech.edu/>

Resources for Students

In your time at Georgia Tech, you may find yourself in need of support. Below you will find some resources to support you both as a student and as a person.

Academic support

- Center for Academic Success <http://success.gatech.edu>
 - 1-to-1 tutoring <https://www.success.gatech.edu/tutoring/>
 - Peer-Led Undergraduate Study (PLUS) <http://success.gatech.edu/tutoring/plus>
 - Knack tutoring connection app <http://gatech.joinknack.com>
- OMED: Educational Services <http://omed.gatech.edu/programs/academic-support>
 - Group study sessions and tutoring programs (SSO login required, access only to subscribers)
- Communication Center <http://www.communicationcenter.gatech.edu>
 - Individualized help with writing and multimedia projects
- Advising and Transition <https://advising.gatech.edu>
 - Academic coaching <https://advising.gatech.edu/academic-coaching>
 - Advising in your major <http://advising.gatech.edu/>

Personal Support

Georgia Tech Resources

- The Office of the Dean of Students: <https://studentlife.gatech.edu/content/get-help-now>
- Center for Assessment, Referral and Education (CARE) <https://care.gatech.edu/>
 - Smithgall Student Services Building 1st floor
 - Students seeking assistance from the Counseling Center or Stamps Psychiatry need to visit CARE first for a primary assessment and referral to on and off campus mental health and well-being resources.
 - *Students in crisis may walk in during business hours (8am-4pm, Monday through Friday) or contact the counselor on call after hours at 404-894-2575 or 404-894-3498, respectively.*
- Students' Temporary Assistance and Resources (STAR): <https://studentlife.gatech.edu/content/star-services>
 - Can assist with interview clothing, food, and housing needs.
- Stamps Health Services: <https://health.gatech.edu>; 404-894-1420
 - Primary care, pharmacy, women's health, psychiatry, immunization and allergy, health promotion, and nutrition
- OMED: Educational Services: <http://www.omed.gatech.edu>
- Belonging and Student Support: <https://belonging.gatech.edu/studentssupport>
- Georgia Tech Police: 404-894-2500; <http://www.police.gatech.edu>

National Resources

- The [National Suicide Prevention Lifeline](#) | new easy to remember phone number: **988**
 - Free and confidential support 24/7 to those in suicidal or emotional distress
- [Didi Hirsch Suicide Prevention & Counseling Center](#)
 - Leading national crisis center with a 24/7 Suicide and Crisis lifeline.
 - 988 or, for teens, dedicated teen line (**1-800-852-8336**)

- National Alliance on Mental Illness ([NAMI](#)) [Northside Atlanta](#)
 - Local branch of a national organization with multiple crisis lines
 - 24/7 crisis support, connect with a trained counsellor, text **741-741**
 - Suicide prevention lifeline: **1-800-372-TALK (8255)** or **1-800-SUICIDE (273-8255)**
 - Veteran’s Crisis Line: **1-800-273-8255**, press “1”
- The [Trevor Project](#)
 - Crisis intervention and suicide prevention support to members of the LGBTQ+ community and their friends
 - Telephone | **1-866-488-7386** | 24 hours a day, 7 days a week
 - [Online chat](#) | 24 hours a day, 7 days a week
 - Text message | Text “START” to **687687** | 24hrs day, 7 days a week
- Many other helpful resources in Georgia can be found [here](#).

Statement of Intent for Inclusivity

As a member of the Georgia Tech community, I am committed to creating a learning environment in which all of my students feel safe and included. Because we are individuals with varying needs, I am reliant on your feedback to achieve this goal. To that end, I invite you to enter into dialogue with me about the things I can stop, start, and continue doing to make my classroom an environment in which every student feels valued and can engage actively in our learning community.