CHEM 6573: Molecular Biochemistry

(Fall 2026)

Schedule: TBA
Location: TBA
Instructor: Prof. Aditi Das, IBB 3306
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Course delivery mode

This will be an in-person lecture course
Attendance and participation are mandatory, and class participation will be scored.

Office hours: Through appointment. Attendance is not mandatory.

Prerequisites:
CHEM 6501 and CHEM 6502, or any other biochemistry class, basic organic chemistry

Expected Foundation Knowledge

Two semesters of undergraduate Biochemistry and one semester of organic chemistry. Be familiar with the functional groups commonly encountered in biomolecules, including amino acids, nucleic acids, lipids, and carbohydrates. Know fundamental aspects of thermodynamics and kinetics as related to concepts in general and organic chemistry.

Honor Code: Each student must sign their exam and quiz stating that they conforms to the Georgia Institute of Technology Honor Code (see: http://www.deanofstudents.gatech.edu/Honor/).

Important Notes:

Access to Canvas is required for class information, homework and exams.
EXAMS will be conducted via Canvas and on paper

Grading Policies

To ensure *transparency*, we will adhere to the following rules:

1. We will honor all accommodations communicated via the ODS.
2. All exams are compulsory to attend and none of them will be dropped.

Evaluation: The course contains the following evaluation categories:

- Exam 1: 100 points (on paper, closed notes but you can bring one informational sheet of paper)
- Exam 2: 100 points (on paper, closed notes but you can bring one informational sheet of paper)
- 10 Quizzes on assigned papers: 100 points
- Paper discussion and class participation: 100 points (10 points per paper)
- *Research report: 200 points*
  Topics will be assigned/discussed by the instructor.
  There is no final exam

Total points: 600

Grades (Tentative):
The following are guaranteed minimum cut-offs in Spring 2024
>=90% = A; >=80% = B; >=70% = C ; >=60% = D

There might be curving based on class statistics, but the *higher of the two* grades (based on the minimum cut-off and based on the curve) will be your final grade. See http://registrar.gatech.edu/info/grading-system for more information about the grading system at Georgia Tech.

Requests for Re-grading: Requests for reconsideration of graded materials must be made in writing (email) during the week the exams are returned.

Academic Integrity

Georgia Tech aims to cultivate a community based on trust, academic integrity, and honor. Students are expected to act according to the highest ethical standards. For information on Georgia Tech's Academic Honor Code, please visit http://www.catalog.gatech.edu/policies/honor-code/ or http://www.catalog.gatech.edu/rules/18/.

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.

Day	Date	Lecture	Topic	Assigned (Tentative Dates)
Mon	21-Aug	1	Fundamentals: Thermodynamics, Kinetics, Biomacromolecules	
Wed	23-Aug	2	Fundamentals: Chemical structures of DNA, RNA & Protein	
Mon	28-Aug	3	Fundamentals: Chemical structures of lipids	
Wed	30-Aug	4	Fundamentals: Chemical structures of carbohydrates	
Mon	4-Sept		No Class (Labor Day)	
Wed	6-Sept	5	Protein Structure	Quiz 1
Mon	11-Sept	6	***Guest Lecture***	
Wed	13-Sept	7	Protein Folding	
Mon	18-Sept	8	Protein misfolded diseases	Quiz 2
Wed	20-Sept	9	Review Session/Teams for presentation/Signal Transduction	PS1
Mon	**25-Sept**		**Exam 1**	
Wed	27-Sept	10	DNA Replication	
Mon	2-Oct	11	DNA Damage	Quiz 3
Wed	4-Oct	12	Transcription/Translation	PS 1 due date
Mon	9- Oct		No Class (Fall Break)	
Wed	11-Oct	13	***Guest Lecture***	Presentation Topics due
Mon	16-Oct	14	DNA damage, repair & drugs	
Wed	18-Oct	15	Lipids-1	
Mon	23-Oct	16	Lipids- 2	Quiz 4
Wed	**25-Oct**	**17**	**Review Session**	
Mon	**30-Oct**		**Exam 2**	
Wed	1-Nov	18	DNA Technology	
Mon	6-Nov	19	Protein Technology	
Wed	8-Nov	20	Lipid and Carbohydrate Technology	
Mon	13-Nov	21	Omics approaches	PS2/Quiz 5
Wed	15-Nov	22	Presentation Team 1/2	
Mon	20-Nov	23	Presentation Team 3/4	
Wed	22-Nov		No Class (Thanksgiving)	
Mon	27-Nov	24	Presentation Team 5/6	
Wed	29-Nov	25	Presentation Team 7/CIOS Survey	Research proposal due
Mon	4-Dec	26		PS2 will be due
Wed	6-Dec		Reading Day: No Class	