CHEM 3522 and CHEM 6502 Biochemistry-II Fall 2026 Syllabus

Instructor Information

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General Course Information

Suggested Text: 1. Lehninger Principles of Biochemistry 7th Edition (Nelson/Cox) (Chapters highlighted). 2. Voet, Voet, and Pratt, Fundamentals of Biochemistry 4th Edition

Description

This is a three-credit biochemistry course. The course objectives are 1) to impart on the students an understanding of the chemical basis of the function of the cellular metabolic pathways and 2) to delineate the rules of acquisition and consumption of intracellular energy. Knowledge of Fundamental Organic and Physical Chemistry is essential.

Materials Needed: ACCESS TO CANVAS is required for class information and quizzes.

Computing and Internet: Students are expected to have regular access to a computer and a stable internet connection to succeed in this course.

Course Policies

Absence: I will follow Gatech excused absence policy.

Evaluation: 3 exams, 1 final exam and quizzes. **I will provide a study guide for each exam.**

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

Grades (Tentative) : 86-100 = A, 75-85 = B, 60-74 = C, 46-59 = D. Below 45 = F.

For Pass/Fail: Pass = 66-100, Fail = below 65.

Honor Code: Each student must sign their exam, quiz, or homework stating that they conform to the Georgia Institute of Technology Honor Code, see: http://www.deanofstudents.gatech.edu/Honor/.

Accommodation for Students with Disabilities

If you are a student with learning needs that require special accommodation, contact the Office of Disability Services (404-894-2563) as soon as possible to make an appointment to discuss your special needs and to obtain an accommodations letter. Please also e-mail me as soon as possible in order to set up a time to discuss your learning needs.

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. The Student-Faculty Expectations articulate some basic expectations that you can have of me and that I have of you. 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.

Campus Resources for Students

Visit https://studentlife.gatech.edu/ for more information about student life.

Topics & ~Timeline for Chem 3522, Biochemistry II

Date(s)	Topics	Chapters
Please review on your own: Structure & Function of Biomolecules, DNA Structure, Enzyme Catalytic Mechanisms		
08/25 & 08/27	Overview of Metabolism, Thermodynamics Considerations & Biochemical Reaction Types	1 & 13 1 & 14
09/01 & 09/03	Bioenergetics (High Energy Compounds) & Coenzymes and Cofactors	13 & **All** 14 & **All**
09/08 & 09/10	Glycolysis & Regulation	14 & 15 15 & 16
09/15 & 09/17	Glycolysis – Other Hexoses and Pentose Phosphate Pathway	14 & 15

	Glycogen Synthesis & Regulation	16
09/22 & **09/24**	Glycogen Synthesis (Contd) & Gluconeogenesis **Exam 1 (Thursday, Sept 24)**	14 & 15 16
09/29 & 10/01	Citric Acid Cycle (Integration of Mammalian Fuel Metabolism)	16 17
10/06 & 10/08	Citric Acid Cycle & Electron Transport **Fall Break (Tuesday, Oct 6)**	16 & 18 17 & 18
10/13 & 10/15	Electron Transport & Oxidative Phosphorylation	13 (section 13.4) & 19 17 & 18
10/20 & **10/22**	Oxidative Phosphorylation **Exam 2 (Thursday, Oct 22**)	19 18
10/27 & 10/29	Photosynthesis	20 19
11/03 & 11/05	Photosynthesis & Lipid Metabolism	20 19
11/10 & 11/12	Lipid Metabolism	17 & 21 20
11/17 & **11/19**	Lipid Metabolism & Amino Acid Metabolism **Exam 3 (Thursday, Nov 19**)	17, 21 & 18 20 & 21

11/24 & **11/26**	Amino Acid Metabolism & **Thanksgiving Holiday (Thursday, Nov 26)**	18 & 22 21
12/01 & 12/03	Integration of Mammalian Fuel Metabolism & Nucleotide Metabolism	22 22 & 23
12/08	Nucleotide Metabolism	22 & 23
	Final Exam, (TBD)	cumulative

Exams	200
Concept Quiz	40
Final Exam	160 + 5

Total	400 + 5

Further suggested literature: Texts

Voet and Voet, Biochemistry (4th Edition).

Stryer et al., Biochemistry, 7th edition; Follman

Lodish et al., Molecular Cell Biology 5th Edition; Freeman

Further suggested literature: Journals

Annual Reviews of Biochemistry http://biochem.aqnnualreviews.org

Biochemistry http://pubs.acs.org/journals/bichaw/index.html

Cell http://www.cell.com

Nature http://www.nature.com/nature/

Nature Structural Biology http://www.nature.com/nsb/

PNAS http://www.pnas.org

Science http://www.sciencemag.org

The EMBO Journal http://www.emboj.org

The Journal of Biological Chemistry http://www.jbc.org

Databases

National Center for Biotechnology Information http://www.ncbi.nlm.nih.gov/

Protein data bank website-- http://www.rcsb.org/pdb/Welcome.do