Text  Biochemistry, 6th Edition Garrett & Grisham

Place  SH 315
Time  1:00 P.M - 2:20 P.M., Tuesday & Thursday
Instructor  Dr. Kayunta Johnson-Winters
Office  350, Chemistry & Physics Building (CPB)
Phone  817-272-3802
Email  kayunta@uta.edu
Faculty profile  http://www.uta.edu/profiles/kayunta-johnson-winters
Office hours  2:20 P.M. – 3:00 P.M., Tuesday & Thursday

Important Dates
Aug. 25  First Day of Classes
Sept. 12  Census date
Nov. 24-25th  Thanksgiving Holiday
Nov 2  Last day to drop courses
Dec 7  Last day of classes
Dec 15  Final exam (class time)

Grade                  Score (%)
A  >  90%
B  >  80%
C  >  70%
D  >  60%
F  <  50%

Description of the Course Content: Goals of the Course:

Students who complete this course successfully should be fully conversant with different aspect of biochemistry, structure and functions of different biomolecules, basic metabolic pathways and signal transduction long with relevant clinical correlations. They should be able to name, draw and identify the major biochemical components of living cells, including: carbohydrates, amino acids, peptides and proteins, nucleotides and nucleic acids, lipids, vitamins, coenzymes and enzymes. They should also understand the elements of enzyme kinetics and inhibition. They will learn various metabolic pathways including glycolysis, TCA cycle, biosynthesis and degradation of fats/ amino acids/proteins/carbohydrates. Emphasis will also be given to basic mechanism of transcription, gene regulation, and hormones. Overall goal is to learn different aspects
of basic biochemistry. The course is intended for students who require biochemistry to support research efforts, or need to satisfy a deficiency before proceeding in the biochemistry graduate program. If CHEM 5318 is used for credit toward a degree, then any of CHEM 5319, 5320, or CHEM 4311, 4312 cannot also be used for credit. Prerequisite: CHEM 2322 or equivalent. A knowledge of physical chemistry is helpful.]

Additional course outcomes:

1) Learn the vocabulary and conceptually understand at an advanced level the biochemical processes by which cells break down organic molecules and trap some of the released energy in the form of reactive nucleotides; use these reactive nucleotides to drive the synthesis of organic building blocks such as sugars, lipids, amino acids and nucleic acids from simpler molecules that serve as precursors.

2) To learn to critically review primary research articles in biochemistry by reading the assigned material related to proteins, expression and purification, kinetics, and metabolism as they are presented in class.

3) Research Project: To learn to critically review primary research articles in biochemistry by preparing a presenting and NIH R15 proposal/paper on a topic relevant to the topics covered in class. This project will teach students how to design and interpret experiments, thereby contributing to the creation of new knowledge in the fields of biochemistry and biophysics. This project will allow students to become knowledgable in a specific subfield of biochemistry.

4) Develop an awareness of ethical responsibilities when conducting and reporting research, and reviewing the research of others.

5) Understanding of the structures and functions of biological molecules.

6) Understanding of intermediary metabolism and its control.

7) Understanding of molecular genetics.

8) Ability to present concepts in oral, written and visual forms.
### Approximate Time Table (topics to be covered)

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<tr>
<th>Date</th>
<th>Topics</th>
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| Aug 25-Sept. 27 | Course introduction, amino acids and proteins  
Enzymes: Kinetics and Specificity; Mechanism Of Enzyme Action; Enzyme Regulation  
DNA replication, mutations and recombination  
Chapters, 4, 5, 6  
Crystallography for Dummies  
Class Discussion: *Biochimica et Biophysica Acta* 1854 (2015) 258–268  
*FEBS Journal* 275 (2008) 1–21  
doi:10.1111/j.1742-4658.2007.06178.x  
Additional Articles: TBD  
Chapters 13, 14  
doi: 10.1021/acs.biochem.5b00762  
Additional Articles: TBD |
| *Sept 20*      | **Exam- I**                                                                                                                                 |
| Sept 22- Oct 6 | Fatty Acids/ Lipids/Membranes, Membrane transport  
Fatty Acid Catabolism/Biosynthesis  
Chapters 8, 9. 23, 24  
Articles: mycolic cell walls, tuberculosis diseases |
| Oct 11- Oct 20 | Glycolysis; TCA cycle  
Pentose phosphate Pathway  
Electron Transport and Oxidative phosphorylation  
Chapters 18, 19, 20 |
| *Oct 25*      | **Exam- II**                                                                                                                                 |
| Oct 27- Nov 10 | Introduction to Biomolecules and their functions  
Nucleotides and Nucleic acids; Structures of nucleic acids; Recombinant DNA technology  
DNA replication, mutations and recombination |
Chapters, 10, 11, 12, 28, 29

*Nov 15*  **Exam III**

Nov 17  Translation, Chapter 30

Nov. 22-29  Discussions concerning ethical issues in STEM  
**Nov. 29\textsuperscript{th}** Research Proposals and PowerPoints are DUE!

Dec 1\textsuperscript{st} and 6th  Research Proposals

*Dec 15*  Final Exam (Comprehensive): During class time

• The exact date for the exams will be announced in class. The topics in each exam will as listed even if the exam date is changed.

** It is MANDATORY that you complete this assignment. Failure to complete this assignment will result in failing the class.

**General Notes:**

Make-up examinations will **NOT** be given [exception: e.g., a student(s) is very ill; required Dr.'s signed document] [no books, no caps, no cell phones, no music devises etc. only allowed a simple calculator and ID required].

The main study material is our textbook and assigned research papers, and exams will be relied on these unless otherwise noted. Supplementary lecture notes are **NOT** the main study material but additional study materials. Prior to the class, study materials (e.g., supplementary lecture notes) will be posted on Blackboard (course content).

After each block of lectures, the posted study materials WILL BE REMOVED FROM Blackboard. Once removed from Blackboard, I do NOT re-post the study materials. I do NOT re-supply the study materials in any other methods (e.g., via email etc).

If necessary, key study information (and relevant issues) will be announced at the beginning of class!

When necessary, quizzes and homework will be given first at the beginning of class. If you are late, you will only be given the remaining time allowed for the quiz to complete the material. Given (provided) quiz scores can be canceled if a misconduct(s) of a student(s) is found. I do NOT give any additional extra-point by arguing quiz points.

The office hours are **NOT** designated for the discussion of makeup exams, patterns of exams, grades, other complaints etc.
Your circled letters on the test-sheet MUST be the same as the bubbled-in letters on your scantron card (type 882-E). No later complaints or corrections will be accepted or allowed!

Your performance will be evaluated by and course grade determined from the scores received on the first three exams (I, II and III), quizzes and the comprehensive final examination according to the grading scale above.

**Expectations for Out-of-Class Study:** Beyond the time required to attend each class meeting, students enrolled in this course should expect to spend at least an additional 4-5 hours per week of their own time in course-related activities, including reading required materials, completing assignments, preparing for exams, etc.

**Drop Policy:** Students may drop or swap (adding and dropping a class concurrently) classes through self-service in MyMav from the beginning of the registration period through the late registration period. After the late registration period, students must see their academic advisor to drop a class or withdraw. Undeclared students must see an advisor in the University Advising Center. Drops can continue through a point two-thirds of the way through the term or session. It is the student's responsibility to officially withdraw if they do not plan to attend after registering. **Students will not be automatically dropped for non-attendance.** Repayment of certain types of financial aid administered through the University may be required as the result of dropping classes or withdrawing. For more information, contact the Office of Financial Aid and Scholarships (http://wweb.uta.edu/ao/fao/).

**Disability Accommodations:** UT Arlington is on record as being committed to both the spirit and letter of all federal equal opportunity legislation, including *The Americans with Disabilities Act (ADA), The Americans with Disabilities Amendments Act (ADAAA), and Section 504 of the Rehabilitation Act.* All instructors at UT Arlington are required by law to provide “reasonable accommodations” to students with disabilities, so as not to discriminate on the basis of disability. Students are responsible for providing the instructor with official notification in the form of a letter certified by the **Office for Students with Disabilities (OSD).** Students experiencing a range of conditions (Physical, Learning, Chronic Health, Mental Health, and Sensory) that may cause diminished academic performance or other barriers to learning may seek services and/or accommodations by contacting:

**The Office for Students with Disabilities, (OSD)**  www.uta.edu/disability or calling 817-272-3364.

**Counseling and Psychological Services, (CAPS)**  www.uta.edu/caps/ or calling 817-272-3671.

Only those students who have officially documented a need for an accommodation will have their request honored. Information regarding diagnostic criteria and policies for obtaining disability-based academic accommodations can be found at www.uta.edu/disability or by calling the Office for Students with Disabilities at (817) 272-3364.
Title IX: The University of Texas at Arlington does not discriminate on the basis of race, color, national origin, religion, age, gender, sexual orientation, disabilities, genetic information, and/or veteran status in its educational programs or activities it operates. For more information, visit uta.edu/eos. For information regarding Title IX, visit www.uta.edu/titleIX.

Academic Integrity: Students enrolled all UT Arlington courses are expected to adhere to the UT Arlington Honor Code:

I pledge, on my honor, to uphold UT Arlington’s tradition of academic integrity, a tradition that values hard work and honest effort in the pursuit of academic excellence.

I promise that I will submit only work that I personally create or contribute to group collaborations, and I will appropriately reference any work from other sources. I will follow the highest standards of integrity and uphold the spirit of the Honor Code.

UT Arlington faculty members may employ the Honor Code as they see fit in their courses, including (but not limited to) having students acknowledge the honor code as part of an examination or requiring students to incorporate the honor code into any work submitted. Per UT System Regents’ Rule 50101, §2.2, suspected violations of university’s standards for academic integrity (including the Honor Code) will be referred to the Office of Student Conduct. Violators will be disciplined in accordance with University policy, which may result in the student’s suspension or expulsion from the University.

All students are expected to pursue their scholastic careers with honesty and integrity. Academic dishonesty will not be tolerated by the Department of Chemistry and Biochemistry. Academic dishonesty includes (but is not limited to) cheating, falsification of data, plagiarism, and contracting/collusion with others to take your test or do your work. Cheating is the use or acquisition of information (data, constants, formulas, textual material, etc.) from either unauthorized sources or in an unauthorized manner. Examples of cheating include, but are not limited to:

- exchanging information during a test or quiz.
- looking at another student's paper during a test or quiz.
- bringing information in any form into the test or quiz other than personal knowledge. This includes:
  - written notes (crib sheets) and digitally stored information (formulas, constants, textual, etc.), looking at a book or other unauthorized source during the test or quiz.
  - accessing information by any electronic means (cellular phones, pagers, radios, etc.).
- processing data or information in an unauthorized manner using a programmable calculator or computer. In other words, unless you have received
In the event that test proctors decide that a student is cheating, the following actions will be taken:
- the student will be notified and, if the situation merits, asked to explain their actions.
- the source of the unauthorized information will be removed during the remainder of the test period and returned to the student following the test, if appropriate.
- the student may be asked to move to a different location to complete the test.
- In some cases the proctor will need to examine temporarily the calculator/computer to verify unauthorized use. The calculator will be returned to the student to permit the student to finish the test.
- a record of the events and actions surrounding the alleged act of cheating will be submitted to the Associate Vice Provost for Student Affairs for further action. See the Undergraduate Catalog for further information.

Electronic Communication: UT Arlington has adopted MavMail as its official means to communicate with students about important deadlines and events, as well as to transact university-related business regarding financial aid, tuition, grades, graduation, etc. All students are assigned a MavMail account and are responsible for checking the inbox regularly. There is no additional charge to students for using this account, which remains active even after graduation. Information about activating and using MavMail is available at http://www.uta.edu/oit/cs/email/mavmail.php.

Student Feedback Survey: At the end of each term, students enrolled in classes categorized as “lecture,” “seminar,” or “laboratory” shall be directed to complete an online Student Feedback Survey (SFS). Instructions on how to access the SFS for this course will be sent directly to each student through MavMail approximately 10 days before the end of the term. Each student's feedback enters the SFS database anonymously and is aggregated with that of other students enrolled in the course. UT Arlington’s effort to solicit, gather, tabulate, and publish student feedback is required by state law; students are strongly urged to participate. For more information, visit http://www.uta.edu/sfs.

Emergency Exit Procedures: Should we experience an emergency event that requires us to vacate the building, students should exit the room and move toward the nearest exit, which is located [insert a description of the nearest exit/emergency exit]. When exiting the building during an emergency, one should never take an elevator but should use the stairwells. Faculty members and instructional staff will assist students in selecting the safest route for evacuation and will make arrangements to assist individuals with disabilities. (http://www.uta.edu/police/Evacuation Procedures.pdf)

Final Review Week: A period of five class days prior to the first day of final examinations in the long sessions shall be designated as Final Review Week. The
purpose of this week is to allow students sufficient time to prepare for final examinations. During this week, there shall be no scheduled activities such as required field trips or performances; and no instructor shall assign any themes, research problems or exercises of similar scope that have a completion date during or following this week unless specified in the class syllabus. During Final Review Week, an instructor shall not give any examinations constituting 10% or more of the final grade, except makeup tests and laboratory examinations. In addition, no instructor shall give any portion of the final examination during Final Review Week. During this week, classes are held as scheduled. In addition, instructors are not required to limit content to topics that have been previously covered; they may introduce new concepts as appropriate.

Additional Information

Library Home Page.......................... http://www.uta.edu/library
Subject Guides .............................. http://libguides.uta.edu
Subject Librarians ......................... http://www.uta.edu/library/help/subject-librarians.php
Course Reserves ............................ http://pulse.uta.edu/vwebv/enterCourseReserve.do
Connecting from Off-Campus ............. http://libguides.uta.edu/offcampus
Ask A Librarian .............................. http://ask.uta.edu

The subject librarian for your area can work with you to build a customized course page to support your class if you wish. For examples, visit http://libguides.uta.edu/os and http://libguides.uta.edu/pols2311fm.