

# COURSE SYLLABUS

## CHEM 4312-001 BIOCHEMISTRY II



**I. TIME & PLACE:** Tu & Th @ 9:30 a.m.-10:50 a.m. in SH 103.

**II. INSTRUCTOR:** Dr. Roshan Perera

A. Office: CRB 102

B. Telephone: (817) 272-9067

C. E-mail: [perera@uta.edu](mailto:perera@uta.edu)

D. Office Hours: 11:00 a.m.-12:00 p.m. on Tuesdays and Thursday or by appointment.

### A. DESCRIPTION OF THE COURSE CONTENT:

**TEXT BOOK:** Biochemistry, 4th Edition Garrett & Grisham

*"As the instructor for this course, I reserve the right to adjust this schedule in any way that serves the educational needs of the students enrolled in this course. –Roshan Perera."*

Date	Topics	Chapter
Aug 23, 28	Introduction/Lipids	8
Aug 30, Sep 4	Fatty Acid Catabolism	23
Sep 6, 11	Lipid Biosynthesis	24
Sep 13*	<b>Exam I (100 points), Chapters 8, 23 &amp; 24</b>	
Sep 18, 20	Gluconeogenesis & Glycogen Metabolism	22
Sep 25, 27, Oct 2	Photosynthesis	21
Oct 4, 9, 11	Nitrogen Acquisition & Amino Acid Metabolism: Urea Cycle	25
Oct 16*	<b>Exam II (100 points), Chapters 21, 22 &amp; 25</b>	
Oct 18, 23	Structure of Nucleic acid (brief)	11
Oct 25, 30	DNA Metabolism: Replication, Recombination and Repair	28
Nov 1, 6, 8	Transcription and the Regulation of Gene Expression	29
Nov 13*	<b>Exam III (100 points), Chapters 11, 28 &amp; 29</b>	
Nov 15, 20	Protein Synthesis (Translation)	30
Nov 27, 29	Completing the Protein Life Cycle: Folding, Processing, and Degradation	31
Dec 4	Review of the main topics: Last Day of Classes	
Dec 6	<b>Final Exam IV (200 points) Comprehensive including Chapters 30 and 31</b> [8:00 a.m. to 10:30 a.m.]	

**Make-up Exams:**

\*\*\*\*\* No make-up examinations will be given \*\*\*\*\*

**Homework** assignments will come from the text book; Solution manual available

**Course Description:** A continuation of CHEM 4311. The breakdown and biosynthesis of fats and the synthesis of carbohydrates, including photosynthesis. Metabolic utilization of proteins and amino acids together with an introduction to protein synthesis. Prerequisite: CHEM 4311, with a grade of "C" or better, or equivalent.

**REQUIRED MATERIALS**

- i. Student solution and Study guide for Garrett and Grisham by Jemiolo and Theg
- ii. Fundamentals of Biochemistry by D. Voet, J. G. Voet and C.W. Pratt
- iii. Biochemistry, 6<sup>th</sup> Edition, Stryer

**B. GRADING**

Grading Policy and Examination Details:

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

\*\*\*\*\* No make-up examinations will be given \*\*\*\*\*

Letter grade assignment:

Numerical average score (%)	Letter grade
90 and above	A
80-89	B
70-79	C
60-69	D
below 60	F

**C. COURSE REQUIREMENTS AND POLICIES**

Stated prerequisites for this course are: one year of Organic Chemistry (CHEM 2322) or equivalent and one year of General Chemistry as well as one semester of Biochemistry I or equivalent.

Please, be fully acquainted with all aspects of chemical bonding, structure, mechanisms, properties of water, pH, acids and bases, etc. before you enroll, as this course relies indispensably on a thorough working knowledge of these topics. If it has been more than one year since you took Organic Chemistry or if you received a grade other than A or B, you are strongly advised to review that material again. Also, you should read and be familiar with Biochemistry I Chapters, since we will not cover these in class in details. Understanding these basics is very important to the subsequent topics as well as to your successful progress in biochemistry. They will be part of block exam # I.

This is a demanding course even for students who are conversant with this material, but if you are not, then the course will be very difficult and cumbersome for you.

**Examinations Policy: READ THIS VERY CAREFULLY!** For examinations, students will be required to present current UTA ID, and any calculator for inspection. Only simple arithmetic calculators will be allowed, no complex graphing and equation-storing calculators will be permitted (for obvious reasons).

During examinations, students must hand in their exam papers when they leave the room for any reason. After this, the student **cannot** return and resume the examination. A student who arrives late for any examination will be allowed to take the examination **only if no other student has finished the exam and left the room.**

Each student is responsible for furnishing the Scantron answer sheets (type 882-E) for the examinations.

#### **D. Important Dates**

Aug 23	First Day of Class
Sep 10	Census Date
Oct 31	Last Day to drop with automatic W for undergraduates
	No drops are permitted after this date (UTA Regulations)

#### **E. Information on Academic Dishonesty, Americans with Disabilities Act, Support Services, etc:**

First of all, let us remind ourselves that the real purpose of this course is to help you acquire problem-solving skills, and a detailed knowledge of general Biochemistry. Presumably, you would also like to acquire good scores in quizzes, examinations and laboratory exercises. However, please remember that grades are not the goal; grades are merely evidence of your progress toward the goal. Your grades cannot be a valid measure of your learning unless the papers you submit represent your own work.

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 tests 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 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 a test or quiz other than personal knowledge. This includes written notes (crib sheets) and digitally stored information (formulas, constants, textual, etc.) on calculators, cell phones, pagers etc.
- Looking at a book or other unauthorized source during the test or quiz.
- Accessing information by any electronic means (cellular phone, pagers, personal stereos, etc.)
- Processing data or information in an unauthorized manner using a programmable calculator or computer. In other words, unless you have received authorization, you are not to use any computer program. This includes specialty computers or calculators in which the programming is "built in" to the computer. You are permitted to use simple calculators which perform arithmetical, logarithmic, and trigonometric functions.

In the event that a test proctor or instructor determines 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 removed to a different location to complete the test.
- Calculator/computer memory will be cleared of the stored information and programs as appropriate. In some cases the proctor will need to temporarily examine the calculator to verify unauthorized use. The calculator will be returned to 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 Undergraduate Catalog for further information.

The following statement is a summary of University policy on cheating—"Students who violate University rules on scholastic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course and dismissal from the University. Since dishonesty harms the individual, all students and the integrity of the University, policies on scholastic dishonesty will be strictly enforced."

### **Bomb Threat Policy**

In the event of a bomb threat to a particular facility, the University Police will evaluate the threat. If required, the exams may be moved to an alternate location, but they will not be postponed. UT-Arlington will prosecute phoning in bomb threats to the fullest extent of the Law.

### **Grade Replacement**

Students enrolling in a course with the intention of **replacing a previous grade** earned in the same course must declare their intention to do so at the Registrar's Office by CENSUS DATE of the semester

in which they are enrolled. Please consult the Undergraduate Catalog for the university policy regarding grade replacement.

**Pass/Fail**

If P or F is a grade option in this class and you intend to take this class for a pass/fail grade instead of a letter grade, you **MUST** inform the instructor, through the necessary paperwork, of your intentions **BEFORE** the census date.

**Drop for NON-PAYMENT of Tuition:**

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://www.uta.edu/ses/fao>).

**Grade Grievances:** Any appeal of a grade in this course must follow the procedures and deadlines for grade-related grievances as published in the current undergraduate / graduate catalog. For undergraduate courses, see [http://www.uta.edu/catalog/content/general/academic\\_regulations.aspx#10](http://www.uta.edu/catalog/content/general/academic_regulations.aspx#10); for graduate courses, see <http://www.uta.edu/gradcatalog/2012/general/regulations/#grades>.]

**Americans with Disabilities Act**

The University of Texas at 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). 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 that disability. Any student requiring an accommodation for this course must provide the instructor with official documentation in the form of a letter certified by the staff in the Office for Students with Disabilities, University Hall 102. 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](http://www.uta.edu/disability) or by calling the Office for Students with Disabilities at (817) 272-3364.

**Academic Integrity:** All students enrolled in this course 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.

Instructors 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.

**Student Support Services:** UT Arlington provides a variety of resources and programs designed to help students develop academic skills, deal with personal situations, and better understand concepts and information related to their courses. Resources include tutoring, major-based learning centers, developmental education, advising and mentoring, personal counseling, and federally funded programs. For individualized referrals, students may visit the reception desk at University College (Ransom Hall), call the Maverick Resource Hotline at 817-272-6107, send a message to [resources@uta.edu](mailto:resources@uta.edu), or view the information at [www.uta.edu/resources](http://www.uta.edu/resources)

**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 a 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>.

**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.