



CLARK ATLANTA UNIVERSITY
Department of Biological Sciences
CBIO 390, Introductory Biochemistry, Fall Semester 2016

Instructor: Bekir Cinar, Ph.D.

Office Hours	Mon-Wed-Fri, 1:00 – 2:00PM What does it mean? I will pretty much guarantee that I will be in my office during this time (unless I state otherwise in class) and you can stop by with no appointment. Some other times, please email to make an appointment with me. I will respond to e-mail within 24 hours, except on weekends or between 9pm-9am.
Office Location	Thomas Cole, RCST 4029B
Office Telephone	404-880-8438
Email	bcinar@cau.edu (this is the best way to contact with me)

Course Information

Course Number/Sect		Course Title	Credit Hours	Semester	Time/Location	Level (U/G)
CBIO 390	01	Introductory Biochemistry	3	Fall 2016	Mon-Wed-Fri: 1000 -1050 CMW 215	U
Course Description		This is an introductory biochemistry course, emphasizing broad understanding of chemical and biological events happening in living systems. The course covers the biochemistry topics including the structure and functional relationship of biological molecules, including proteins, enzymes, carbo-hydrates, lipids, and nucleic acids. In addition, this course provides an introduction to metabolic pathways and bioenergetics, including glycolysis and fatty acid oxidation, etc.				
Prerequisite		CBIO 111, CBIO 112, CCHE 111, CCHE 112, CCHE 231 and CCHE 232				

Learning Objectives: By the end of this course,

- Students will learn to think critically about biochemistry and understand the basic principal and composition of micro-molecules.
- Students will define and recognize major concepts and principles in biochemistry and think analytically about biological processes.
- Students will understand metabolic pathways and bioenergetics including glycolysis and TCA cycle.
- Student will demonstrate knowledge of simple changes in molecules and pathways can alter biochemical processes and cellular functions.
- Students will communicate scientific knowledge effectively orally and in writing biochemical concepts, problems, and solutions.
- Students will demonstrate an ability to work collaboratively.
- Students will be become familiar with online learning resources such as the eBook, Canvas, etc.
- Students will be confident in searching, retrieving, evaluating and analyzing data or information.

Learning outcome will be measure through clicker questions, quizzes, exams and assignments. The goal is everybody is successful through learning.

Class Format:

Active and cooperative learning are strongly encouraged. This means that each of you is responsible for your own learning method. I strongly encourage you to actively participate in class discussions and work in groups outside of classroom. During my lectures, I will try to facilitate 'Q & A' sessions to promote. In addition, I strongly suggest you to read chapters and to learn the text book assignments before each class.

RESPECT EVERYONE'S RIGHT TO LEARN. Meaning that students must turn off their cell phones, computers, and all other electronic devices before entering class and they must remain off while class is in session unless otherwise instructed by your Instructor. Disruptive individuals will not be tolerated and will be asked to leave the class. In addition, a late entrance to class will not be tolerated.

Teaching/Learning Tools: (lectures, videos, outside speakers, etc.):

I will provide several teaching and learning tools that help you learn and understand course content.

1. Textbook

- Contains material that will be covered in the lecture plus a small amount of additional material.
- Has your graded quizzes (more on this below).
- Practice quizzes.

2. PowerPoints and Clicker Questions

- I will be lecturing this class in the form of PowerPoint presentation. Also, I will provide my presentation in way that you can take notes. I will also utilize student response system (**clickers**).

3. Practice Exams.

- I will provide problem solving, multiple choices, and matching questions. My suggestion on these is to wait until you are done studying and then take the practice exam without looking at your notes.

In addition, I will also use **Canvas** (<https://mycanvas.cau.edu/>), if necessary, to communicate with students outside of class. The student is expected to communicate using complete sentences and profanity and disrespect is strictly prohibited. Your style of communication by any means will also be evaluated for academic success.

Note that I will communicate with you using email that is assigned to students in Banner Web. Thus, I strongly suggest you to use your CAU assigned student email.

Attendance:

Attendance to every class is strongly encouraged and will be a determining factor for your success in this class. If you miss a class, you will be held responsible for all material covered. Attendance to exams is absolutely mandatory.

Unexcused Absences: I am required to maintain attendance records and report any student who exceeds 3 unexcused absences.

Excused Absences: Obvious exceptions such as a death in the family, hospitalization and extreme illnesses will be accepted and dealt with appropriately. I must receive a note from the Dean of Students documenting any emergency to schedule a make-up exam. Make-up exams are usually more difficult than the original exam administered. For more details on what qualifies as an excuse, see your Student Handbook.

- **Please turn off all beepers and cell phones before entering class.**
- **Please take off all caps, including wave caps, before entering class.**

Grading and other Policies:

You will *earn* your grade in the course based on the degree to which you have mastered the course material, concepts, critical thinking, application, writing and problem solving skills. *Please think critically, but not the memorize-**Memorization alone will only get you a 'C' at best.***

Here is how your grade will be determined. You are guaranteed at least those grades if you have those percentages.

Grade	Percentage
A	90-100%
B	80-89%
C	70-79%
D	60-69%
F	below 60%

Grade Breakdown:	Assignment Points Counted	Points/Credits
	3 Exams (100 points each)	300
	10 Quizzes (10 points each)	100
	Attendance (recorded on attendance sheet)	50
	Assigned project	50
	Final exam	100
	Total	600

Grade Calculation: $\text{YOUR \%SCORE} = \frac{\text{Total points earned}}{600} \times 100$

A MINIMUM of 50% attendance is required for student IN ORDER TO PASS THE CLASS. Student must attend 80% of class in order to claim attendance points/credits.

Note that I strongly recommend that you keep all your grades, worksheets, exams and quizzes until you receive your final course grades from the college.

Extra Credit:

Extra credit may be given at the discretion of the Instructor but is usually no more than 30 points.

Extra Credit 1: 10 points for doing Learning Curve Questions for each chapter prior to class

Extra Credit 2: 10 points for Clicker questions if you participate in **80%** of Clicker questions

Extra Credit 3: 10 points; to be determined

End of the Semester:

*At the end of the semester, there will be a handful of people that need "just a few points" to get the grade they desire. The extra credit assignments listed above will be designated as THE mechanism to get these points. I **WILL NOT NEGOTIATE GRADES AT THE END OF THE SEMESTER.** It is my expectation that you will accept the grade assigned to you and take responsibility for YOUR work throughout the semester. Grade negotiation always leads to someone receiving special treatment and is a policy that I cannot abide as I desire to maintain an atmosphere of academic honesty and integrity. If you are concerned about your grade please come and talk to me **DURING** the semester when something **can be done** about it.*

Learning Resources/Required Readings:

Textbook:

Biochemistry: A Short Course, 3rd Edition, by John L. Tymoczko, Jeremy M. Berg, Lubert Stryer; Published by W. H. Freeman and Company (www.whfreeman.com), published in 2015

Available through University Bookstore.

Also, I reserved the instructor copy of the book in Atlanta University Center Robert W. Woodruff Library. You can find it in the following link: <http://auctr.worldcat.org/course reserves/course/fetch/2930387>

LaunchPad:

Access: <http://www.macmillanhighered.com/launchpad/tymoczko3e/3419762>

My online course is open for student registration. Follow these steps to get started. If you need additional guidance, consult the student [Quick Start](#) guide, especially the [system requirements](#) which list recommended browsers. To sign up for it,

1. Go to <http://www.macmillanhighered.com/launchpad/tymoczko3e/3419762>
2. Bookmark the page to make it easy to return to.
3. Enroll in our course using one of the following options:
 - If you have an access code, select "I have a student access code," enter the code exactly as it appears on the card, and click Submit.
 - If you don't have an access code, either purchase a text package that includes one OR click "I want to purchase access" and follow the instructions.
 - If you need to start working but can't purchase right away, select "I want temporary access" and follow the instructions.

If you have problems registering, purchasing, or logging in, please contact Customer Support. You can reach a representative 24 hours a day, 7 days a week:

- through the [online form](#)
- by chat

Or tech support representatives are available Monday-Friday, 7:00 am to 3:00 am EST; Saturday and Sunday, 9:00 am to 3:00 am EST: by phone at (800) 936-6899

Temporary access may be available for student for certain time, which gives time to purchase Launchpad Access from the bookstore or our e-commerce site. Please check with the Launchpad provider.

Supplemental Readings/Additional Bibliography:

I will provide additional reading materials for each chapter prior to class if it is necessary.

Tips on studying:

1. Read the assigned text prior to class meetings. The textbook does a nice job of explaining basic concepts.
2. I strongly recommend visiting the eBook and other resources in Launchpad and working through the work problems, particularly the "Learning Curve" resource to prepare you for each chapter.
3. If you are having trouble with a concept, there are probably other classmates that are having trouble, too. If you don't ask questions, I assume that everything makes sense to you.

The Following Topics Will Be Covered
Lecture Schedule *(Subject to Change)*

DATE	DAY	TOPIC	TEXT	QUIZ (Due date)
8/17	W	Introduction	Syllabus	
8/19	F	Lecture 1: Biochemistry and the Unity of Life	Chapter 1	
8/22	M	Lecture 2: Water, Weak Bonds, and the Generation of Order Out of Chaos	Chapter 2	
8/24	W	Lecture 3: Amino acids	Chapter 3	Q1
8/26	F	Lecture 4: Protein Three-Dimensional Structure	Chapter 4	
8/29	M	Lecture 5: Techniques in Protein Biochemistry	Chapter 5	
8/31	W	Lecture 6: Basic Concepts of Enzyme Action	Chapter 6	Q2
9/2	F	Lecture 7: Enzyme Kinetics and regulation	Chapter 7	
9/5	M	No Class: Labor Day Holiday		
9/7	W	Lecture 8: Mechanisms and Inhibitors	Chapter 8	
9/9	F	Lecture 9: Hemoglobin, an allosteric Proteins	Chapter 9	
9/12	M	Lecture 10: Carbohydrates	Chapter 10	Q3
9/14	W	Lecture 11: Carbohydrates	Chapter 10	
9/16	F	Lecture 12: Lipids	Chapter 11	
9/19	M	Preparation for Exam 1		Q4
9/21	W	Exam 1 (Lecture 1-12)		
9/23	F	Lecture 13: Membrane Structure and Functions	Chapter 12	
9/26	M	Lecture 14: Signal Transduction Pathways	Chapter 13	
9/28	W	Lecture 15: Signal Transduction Pathways	Chapter 13	
9/30	F	Lecture 16: Digestions: Turning a Meal into Cellular Biochemicals	Chapter 14	Q5
10/3	M	Lecture 17: Metabolism Basic Concepts and Design	Chapter 15	
10/5	W	Lecture 18: Glycolysis	Chapter 16	

10/7	F	Lecture 19: Glycolysis	Chapter 16	
10/10	M	Lecture 20: Glycolysis	Chapter 16	Q6
10/12	W	Lecture 21: Gluconeogenesis	Chapter 17	
10/14	F	Lecture 22: Preparation for the Cycle	Chapter 18	
10/17	M	Lecture 23: Harvesting Electrons from the Cycle	Chapter 19	
10/19	W	Preparation for Exam 2		Q7
10/21	F	Exam 2 (Lecture 13-23)		
10/24	M	Lecture 24: The Electron-Transport Chain	Chapter 20	
10/26	W	Lecture 25: The Proton Motive Force	Chapter 21	
10/28	F	Lecture 26: Glycogen Degradation	Chapter 24	Q8
10/31	M	Lecture 27: Glycogen Synthesis	Chapter 25	
11/2	W	Lecture 28: The Pentose Phosphate Pathway	Chapter 26	
11/4	F	Lecture 29: Fatty Acid Degradation	Chapter 27	
11/7	M	Lecture 30: Fatty Acid Synthesis	Chapter 28	
11/9	W	Lecture 30: Lipid Synthesis: Storage lipids, Phospholipids, and Cholesterol	Chapter 29	Q9
11/11	F	Lecture 31: Structure of DNA and RNA molecules	Chapter 33	
11/14	M	Lecture 32: DNA Replication	Chapter 34	
11/16	W	Lecture 33: DNA Repair and Recombination	Chapter 35	
11/18	F	Lecture 34: RNA regulation	Chapter 36	Q10
11/21	M	Preparation for Exam 3		
11/23	W	Exam 3 (Lecture 24-36)		
11/24-11/25		Thanksgiving Holiday		
11/28	M	Final Exam review		
11/30	W	Final Exam review		

12/1-12/2		Reading Period		
12/5-12/9		Final Examination		

About Your Instructor:

Dr. Bekir Cinar is an Associate Professor of Biological Science and a member of the Center for Cancer Research and Therapeutic Development at Clark Atlanta University (CAU). Dr. Cinar received his Ph.D. degree in Biochemistry and Molecular Genetics from the University of Virginia, Charlottesville, VA, and completed his postdoctoral training in Boston Children's Hospital and Harvard Medical School, Boston, MA. Prior to joining to CAU, Dr. Cinar was an Assistant Professor of Medicine and Biomedical Sciences and a member of Samuel Oschin Comprehensive Cancer Institute at Cedars-Sinai Medical Center, Los Angeles, CA.

By training, Dr. Cinar is a biochemist and molecular biologist with extensive research experience in Biochemistry, Molecular Biology and Cancer Biology. Dr. Cinar's research focus is on signal transduction and gene expression mechanisms relevant to cancer development, progression, metastasis, and therapeutic resistance in disease models, particularly prostate cancer, which is a leading causes of cancer deaths among men in the United States and Western countries. The current research in Dr. Cinar's laboratory investigate the role of the Hippo-YAP signaling pathway to understand the molecular mechanisms of how prostate cancer progresses and acquires resistance.

Dr. Cinar published several peer-review research articles in high-impact cancer and biochemical journals; one of which was published in *Nature Communications*, *September 1, 2015*. Dr. Cinar's laboratory utilizes variety of biochemical and cellular methods including proteomics, genomics and bioinformatics as well as cell cultures including 3D cultures, animal models and clinical samples to carry out the proposed research. In addition, Dr. Cinar has trained several undergraduate, graduate, and post graduate students; all of them have career path in academia.

Contact Information/Academic Integrity Statement

Cheating involves offering or accepting *unsanctioned* assistance on any coursework (e.g. from co-enrolled or previously enrolled students) or utilizing *unsanctioned* resources (e.g. concealed notes, text messages) to complete course assignments and/or examinations. Offering or accepting information about an examination prior to or during the exam period is a form of cheating. Be sure that you understand what cheating is, so that you can avoid it. If you have questions about cheating, it is your responsibility to address them with the course instructor. Any student involved in an incident of cheating will receive an automatic zero for that particular assignment, quiz or exam. Additionally, at the discretion of the instructor, the student may receive a lowered or failing grade for the course. In all cases, a letter detailing the incident will be submitted to the student's permanent academic file, and may also be referred to the Office of the Academic Dean for further disciplinary action.

It is very important that you understand **plagiarism** (using the words or ideas of others without giving proper credit) **is** a form of cheating. Using information, data or ideas from other people without acknowledging proper credit is a form of plagiarism. Using information, data or ideas from published and/or electronic sources without acknowledging proper credit is also a form of plagiarism. Be sure that you understand what plagiarism is, so that you can avoid it. If you have questions about plagiarism, it is your responsibility to address them with the course instructor. Any student involved in an incident of plagiarism will receive an automatic zero for that particular assignment or report. Additionally, at the discretion of the instructor, the student(s) may receive a lowered or failing grade for the course. In all cases, a letter detailing the incident will be submitted to the student's permanent academic file, and may also be referred to the Office of the Academic Dean for further disciplinary action.

By my signature below, I acknowledge that the course professor may contact me regarding my progress in the course and that I have read and understand the Academic Integrity Statement for this course.

Printed Name

School Address

Class Name

Major

Phone Number

E-mail

Career Aspiration

Preferred learning style

One Thing I want to learn

Signature

Date