



COLLEGE OF HEALTH AFFAIRS
DEPARTMENT OF HEALTH AND BIOMEDICAL SCIENCES
BMED 4260-02; BMED 4260-03: Advanced Molecular Biology

SYLLABUS – FALL 2016

INSTRUCTOR & OFFICE HOURS:

Ms. Michelle J. Zamarron MS.BIOL

OFFICE HOURS:

Office: To Be Determined

M 11:00am-1:00pm

Office Phone: To Be Determined

W 11:00am-1:00pm

Email: (interim email) mich3ll3jz@tamu.edu

Or by Appointment

MEETING TIMES AND LOCATION: Lecture:

BMED 4260-02 Wednesday 9:00am-10:40am; LHSB #61 1.410 /Brownsville Campus

BMED 4260-03 Friday 2:00pm-3:40pm; Sabal Hall #96 2.110A /Brownsville Campus

TEXTBOOK AND/OR RESOURCE MATERIAL:
REQUIRED:

Molecular Biology 5th Edition (2011). By Robert Weaver McGraw-Hill Education **ISBN-10:** 007352532

We will be using the associated online resource material for homework assignments-access code for online resources comes with textbook or can be purchased as stand alone.

COURSE DESCRIPTION:

Molecular Biology is a course organized around the Central Dogma of Biology with presentations covering fundamental aspects of DNA and RNA structure, their function and their interactions with proteins. The course opens with a discussion of the physical and chemical properties that drive the interactions of proteins with nucleic acids. This is used as a basis for understanding the material presented in the subsequent five modules, which cover DNA replication, DNA repair, gene regulation, transcription and translation.

PRE-REQUISITES/ CO-REQUISITES:

BMED 1101, BMED 1103 Requisite of BMED 1102

COURSE LEARNING OUTCOMES:

This course aims to provide students with a basic understanding of:

1. A basic understanding of the structure and function of DNA and RNA and the cellular processes of DNA replication, DNA repair, gene regulation, transcription and translation, with an appreciation for the big open questions in the research areas around these topics.
2. Exposure to techniques used in contemporary molecular biology and biochemistry research, and an appreciation for advantages and disadvantages of different techniques and how they have been used to create the current knowledge in the aforementioned research fields.
3. Practice in experimental design and proposal presentation, using problems addressing contemporary research questions from molecular biology.
4. Knowledge of resources available for viewing protein structure, and build skills in visualizing structures
5. An appreciation for the quantitative aspects of data analysis and how it may inform research in molecular biology and biochemistry.

GRADING POLICIES: (PASSING GRADE FOR THIS COURSE IS C)

Presentation	25%
Exam 1	25%
Exam 2	25%
Final exam	25%

Score Range	Grade
90-100	A
80-89	B
70-79	C
60-69	D

COURSE IMPORTANT DATES:

The UTRGV academic calendar can be found at <http://my.utrgv.edu> (Important dates for Fall 2016):

Fall 2016 Term (August 29 – December 15)

Aug 26 Waitlist ends Last day to withdraw (drop all classes) for a 100% refund

Aug 29 Fall classes begin Sept 1 Last day to add or register for Fall classes

Aug 29 – Sept 2 Last day to withdraw (drop all classes) for a 80% refund

Sept 5 Labor Day Holiday, no classes

Sept 6 - Sept 12 Last day to withdraw (drop all classes) for a 70% refund

Sept 14 Census day (last day to drop without it appearing on the transcript)

Sept 13 - Sept 19 Last day to withdraw (drop all classes) for a 50% refund

Sept 20 - Sept 26 Last day to withdraw (drop all classes) for a 25% refund

Nov 17 Last day to drop (DR grade) a class or withdraw (grade of W)

Nov 24 - Nov 25 Thanksgiving Holiday, no classes

Dec 8 Study Day, no classes

Dec 9 – Dec 15 Final Exams

CALENDAR OF ACTIVITIES: ASSIGNED READING WILL BE ADDED THE FIRST WEEK OF SEMESTER:

WEEK	CLASS	DATE	LECTURE Shown are dates for Wednesday class, same topics covered in Friday class within the same week. Schedule may be modified during semester.
1	1	08/31	History of Molecular Biology Overview: Important Discoveries Chapter 1: Team Assignments and Discussion: Potential Topics for Team Presentations at end of semester
2	2	09/07	(9/5 Labor day Monday NO CLASSES) YES! – we have class DNA replication part A: Prokaryotes

			Tautomeric shifts, Transitions and Transversions, deletions and insertions, Point mutations, thymine dimers,
3	3	09/14	DNA replication part B: Eukaryotes Tautomeric shifts, Transitions and Transversions, deletions and insertions, Point mutations, thymine dimers,
4	4	09/21	DNA damage and repair mechanisms: Prokaryotes vs Eukaryotes
5	5	09/28	DNA damage and repair mechanisms cont. Prokaryotes vs Eukaryotes: Review for Exam I
6	6	10/05	Exam 1 covers topics from 8/31 through 9/28
7	7	10/12	Homologous Recombination; Crossing over events – 1 strand, 2 strand, 3 and 4 strand; coupling and repulsion, linked genes; X-linked; genetic mapping; mutant alleles and human disease;
8	8	10/19	Transcription A: Prokaryotic Transcription: Proteins and Process,
9	9	10/26	Transcription B: Eukaryotic Transcription: Proteins and Process, Post Transcription – pre mRNA processing introns and exons, alternative splicing events - Review for Exam II
10	10	11/02	Exam 2 covers topics from 10/5 through 10/26 (Tuesday 11/08 Election Day! VOTE!)
11	11	11/09	Transcription C Mutational Events: Effects on Transcription (Tuesday 11/08 Election Day! VOTE!)
12	12	11/16	Translation A: Prokaryotic Roles of the RNAs (mRNA, tRNA, rRNA) Homework Assignment:
13	13	11/23	Translation B: Eukaryotic Roles of the RNAs (mRNA, tRNA, rRNA) Yes! We Have Class on Wednesday but not Friday's class Wednesday Class: Homework Assignment Due In Class! Will not accept late work! Friday class – you will email me your homework assignment on Friday! Must be email dated and received by me on Friday up to 11:59pm – No Late Work Accepted! (11/24 and 11/25 Thanksgiving NO CLASS)
14	14	11/30	Translation C
15	15	12/07	Presentations Due! (12/08 DEAD DAY! STUDY DAY! NO CLASSES!)

ATTENDANCE POLICY:

Attendance is mandatory. Any disrespect will imply a reduction of 10% of the final grade. There will be no makeup assignments given regardless of circumstance for this course.

UTRGV Policy Statements:**STUDENTS WITH DISABILITIES:**

If you have a documented disability (physical, psychological, learning, or other disability which affects your academic performance) and would like to receive academic accommodations, please inform your instructor and contact Student Accessibility Services to schedule an appointment to initiate services. It is recommended that you schedule an appointment with Student Accessibility Services before classes start. However, accommodations can be provided at any time. **Brownsville Campus:** Student Accessibility Services is located in Cortez Hall Room 129 and can be contacted by phone at (956) 882-7374 (Voice) or via email at accessibility@utrgv.edu. **Edinburg Campus:** Student Accessibility Services is located in 108 University Center and can be contacted by phone at (956) 665-7005 (Voice), (956) 665-3840 (Fax), or via email at accessibility@utrgv.edu.

MANDATORY COURSE EVALUATION PERIOD:

Students are required to complete an ONLINE evaluation of this course, accessed through your UTRGV account (<http://my.utrgv.edu>); you will be contacted through email with further instructions. Online evaluations will be available Nov. 18 – Dec. 9, 2016. Students who complete their evaluations will have priority access to their grades.

ATTENDANCE:

Students are expected to attend all scheduled classes and may be dropped from the course for excessive absences. UTRGV's attendance policy excuses students from attending class if they are participating in officially sponsored university activities, such as athletics; for observance of religious holy days; or for military service. Students should contact the instructor in advance of the excused absence and arrange to make up missed work or examinations.

SCHOLASTIC INTEGRITY:

As members of a community dedicated to Honesty, Integrity and Respect, students are reminded that those who engage in scholastic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course and expulsion from the University. Scholastic dishonesty includes but is not limited to: cheating, plagiarism, and collusion; submission for credit of any work or materials that are attributable in whole or in part to another person; taking an examination for another person; any act designed to give unfair advantage to a student; or the attempt to commit such acts. Since scholastic dishonesty harms the individual, all students and the integrity of the University, policies on scholastic dishonesty will be strictly enforced (Board of Regents Rules and Regulations and UTRGV Academic Integrity Guidelines). All scholastic dishonesty incidents will be reported to the Dean of Students.

SEXUAL HARASSMENT, DISCRIMINATION, and VIOLENCE:

In accordance with UT System regulations, your instructor is a “responsible employee” for reporting purposes under Title IX regulations and so must report any instance, occurring during a student’s time in college, of sexual assault, stalking, dating violence, domestic violence, or sexual harassment about which she/he becomes aware during this course through writing, discussion, or personal disclosure. More information can be found at www.utrgv.edu/equity, including confidential resources available on campus. The faculty and staff of UTRGV actively strive to provide a learning, working, and living environment that promotes personal integrity, civility, and mutual respect in an environment free from sexual misconduct and discrimination.

COURSE DROPS:

According to UTRGV policy, students may drop any class without penalty earning a grade of DR until the official drop date. Following that date, students must be assigned a letter grade and can no longer drop the class. Students considering dropping the class should be aware of the “3-peat rule” and the “6-drop” rule so they can recognize how dropped classes may affect their academic success. The 6-drop rule refers to Texas law that dictates that undergraduate students may not drop more than six courses during their undergraduate career. Courses dropped at other Texas public higher education institutions will count toward the six-course drop limit. The 3-peat rule refers to additional fees charged to students who take the same class for the third time.