

# SYLLABUS - MOLECULAR CELL BIOLOGY - BIOL3314

## CRN 12792 - Fall 2022

**CLASS LOCATION :** UGLC 126 (face-to-face course only)

**DAYS & TIME:** Tuesdays & Thursdays, 10:30 AM - 11:50 AM

*At this point, the relatively low levels of local transmission of the virus responsible for COVID-19 (SARS-CoV-2) and the high degree of vaccination in our community provide safe conditions to hold our class in a face-to-face format. Thus, the online option is not available for this course. If you are concerned about viral infection, you are encouraged to use a KN95 or N95 mask in the classroom. Additionally, efforts will be made to record all lectures and post them online within 48 h, so that you will have the option to stay home if you are feeling any symptom of viral infection or if you simply want to watch them again.*

Notice that our Blackboard shell for this course will be our main communication tool throughout the semester; therefore, you are expected to check both Blackboard and your UTEP email frequently.

**INSTRUCTOR:** Germán Rosas-Acosta, MSc, PhD ([grosas3@utep.edu](mailto:grosas3@utep.edu))

For any email communication with the instructor related to this course, please indicate "BIOL3314" in the subject line. If you don't follow this, your email may go unanswered.

**OFFICE:** BioSciences Building, Rm.4.148; Office: (915) 747-5122

**OFFICE HOURS:** Group office hours will be offered right after class, **Tuesdays & Thursdays, 11:55 AM - 1:00 PM** at the professor's office or a location indicated during lecture.

*Individual office hours can be requested. To do so, email Dr. Rosas-Acosta at [grosas3@utep.edu](mailto:grosas3@utep.edu) and indicate "BIOL3314 office hours request" on the subject line. While I will make my best effort at accommodating your needs, I can't guarantee that I will be able to schedule a meeting within the week after your request nor that I will be able to do it at all.*

**TUTOR:** Iveth Munoz ([imunoz11@miners.utep.edu](mailto:imunoz11@miners.utep.edu))

### LECTURE TEACHING

**ASSISTANT (TA):** Rebeca Orozco ([rorozco12@miners.utep.edu](mailto:rorozco12@miners.utep.edu))

**TEXTBOOK:** The CELL: A Molecular Approach, Eighth Edition, By - Geoffrey M. Cooper (Sinauer Associates, Oxford University Press)

*Students are encouraged to buy the book. It is up to date, will be essential throughout the course, and will help you prepare for future tests (MCAT, PCAT, DAT, etc). The 7<sup>th</sup> edition of the book can be used in substitution for the 8<sup>th</sup> edition, but whenever there might be differences in content, the 8<sup>th</sup> edition will be considered to be correct.*

**OTHER MATERIALS:** **iClicker cloud:** We will use the **iClicker cloud** for all our in-class activities. Registration is FREE to all UTEP students. To register, follow this link: <https://www.iclicker.com/students>.

*I highly encourage you to use your smart phone for the iClicker activities and your laptop or tablet for following and annotating the PowerPoint presentations, which will be uploaded before every class session in our Blackboard shell.*

**Respondus LockDown Browser:** We will use the *Respondus LockDown Browser* for EVERY EXAM given throughout the semester. Instructions on how to download and install this browser are provided in this link: [INSTALLING LOCKDOWN BROWSER](#). You should test the functionality of your computer and the Responds LockDown Browser before taking your first exam. You will not be allowed to download the browser in the classroom during the exam. Be aware that any issue you may experience with either your computer or your browser during an exam will likely increase your stress, take away valuable time, and decrease your odds of performing well in the test.

taking Exams will be given **in the classroom** during the times indicated in this syllabus (please be aware that the specific dates are subject to change). Only students previously registered with CASS will have the option to take the exams outside the classroom using Respondus Monitor as the actual interface for all exams. Respondus Monitor requires the use of a camera and a microphone associated to your computer. Respondus LockDown Browser will not run from a smart phone, but you can run it from an iPad.

**YouTube videos produced by the instructor:** You will be expected to watch several YouTube videos produced by the instructor. The YouTube videos that correspond to each class are indicated in the course schedule. These videos do not substitute for the material covered in class but instead are expected to supplement the information provided by the lecture and the book. The link for the YouTube channel for this course is here [The Molecular Cell Biology YouTube Channel](#). Please be aware that additional movies will be uploaded in the near future. You will receive specific announcements whenever that happens.

**The Molecular Cell Biology Podcast:** The instructor produces a podcast that complements the content covered in this course. To access it, follow [THIS LINK](#) or find it using your favorite podcast platform (the podcast is hosted in Podbean, but it is also available in Apple Podcasts, Google Podcasts, Spotify, and Amazon Music/Audible).

## **I. COURSE CONTENT (What will you learn?):**

This course will give you an integrated view of our current understanding of how EUKARYOTIC cells work at the molecular level. Specifically, the material to be covered is aimed at providing you with a solid understanding of:

1. The basic mechanisms by which the genetic information is organized, maintained, transcribed into RNA, and translated into proteins.
2. How gene expression is regulated at different levels so that cells synthesize the right proteins at the right time in the right amounts.
3. The different mechanisms regulating protein function and localization within the cell.
4. How regulating protein expression and protein activity allows the cell to carry out its functions in an organized manner.
5. How deregulating the different processes and mechanisms referred above leads to various human diseases.

## **II. COURSE GOALS (What do I want you to be able to do by the time you get out of this course?):**

By the end of this course, students are expected to:

- 1) ***Know the language*** of molecular cell biology.
- 2) ***Understand the most fundamental concepts*** of molecular cell biology.
- 3) Be able to ***apply those fundamental concepts to solve problems*** related to molecular cell biology.
- 4) ***Appreciate*** the application of molecular cell biology to modern medicine.
- 5) ***Realize the extent of our current ignorance*** in some of the most exciting aspects of cell biology and ***appreciate how solving current open questions may greatly advance medicine and our understanding of life*** in general.
- 6) ***Develop a logical, evidence-based approach to your daily experiences*** and to your decision-making processes, one that empowers you to be the driver of your present and the maker of your future.

### III. COURSE APPROACH:

I will conduct this course in a combination of **self-teaching, in-class activities, group activities,** and traditional lectures.

- 1) **Self-teaching:** In preparation to each class, you will be expected to read the textbook and utilize the Blackboard® site associated with this course. To ensure that you do so, we will use **Readiness Assessment Tests (RATs)**, which are short quizzes given in Blackboard® that you will be required to take **up to 1 hour before the class it is due for (YES, this implies that you WILL BE QUIZZED on reading material BEFORE it is covered in class.)** The RATs will assess your understanding of the reading material assigned, help you to keep up with the material, and allow you to take charge of your own learning process.

In addition to reading the textbook, for most classes you will also be expected to **view one or several movies** (available through the instructor's own [The Molecular Cell Biology YouTube Channel](#)) before coming to class. The likely due dates for watching each movie are indicated in the [tentative schedule](#) given in this syllabus. In-class **iClicker cloud** polling will be used by the instructor to verify that you watched the videos assigned for the class. The use of videos will allow us to decrease the amount of time spent lecturing in class. A series of podcasts is also available as an additional source of information. The podcast episodes are numbered and the episode corresponding to any given class will be announced through Blackboard. Additional videos will also be released throughout the semester. Links to any additional required video will be provided in Blackboard.

- 2) **In-class Activities:** During our class sessions, you will be quizzed with questions presented in the PowerPoint presentations shown during class. The in-class activities are aimed at assessing not just your ability to recall the basic facts related to the information being covered, but also your ability to apply those facts to interpret statements, analyze data, and draw conclusions. **iClicker cloud** polling will be used to collect your answers (see below).

*The in-class activities and the extra credit associated with them will not be available in any other format or at any time beyond class time.*

- 3) **Group Activities:** In preparation for every exam, you will work with four other students of your choice (your team) to complete a group activity that should be submitted a week before every exam. The group activities will constitute actual summaries that will help you get ready for the exam, and therefore we will refer to those activities as the "FastPass" to the exam. Be aware that **the teams will be organized during our first class of the semester**, so it is essential that you attend the first class. Also, the teams are expected to be maintained throughout the semester, so I encourage you to become well acquainted with your teammates. Your team could easily become a very effective study group.
- 4) **Lectures:** Our lectures will be aimed at clarifying and solidifying the material that you have read on the book, reviewed in the movies, and sometimes heard on the podcast, skipping topics that are not fully relevant, and emphasizing the most relevant points, the ones you should know. For the lectures I will use PowerPoint presentations that **will be posted in Blackboard® the night before each class.**

Our lectures will be recorded and the resulting videos will be posted in our Blackboard shell, but it may take me up to two days to do so. Be aware that the lectures will not be broadcasted, so the only way for you to earn participation points via **iClicker** is by **being physically present in the classroom.**

### IV. DETAILED DESCRIPTION OF THE COURSE:

The course will be divided into 11 major topics:

- |  |  |
|--|--|
| 1) Chromosome Structure & Genomes  | 7) The Endoplasmic Reticulum, the Golgi apparatus, and protein sorting |
| 2) Replication   | 8) Cell Surface (Plasma Membrane)                                      |
| 3) Transcription   | 9) Cell Cycle  |
| 4) Translation   | 10) Apoptosis & Stem Cells.  |
| 5) Protein Folding, Post-translational modifications, and Regulation of Protein Function | 11) Cancer   |
| 6) The nucleus & nuclear traffic   |  |

**Our class:** In each class we will cover the most important areas related to each topic, and I will emphasize the concepts and ideas that are essential for you to know. So, **class attendance will matter**. Pay attention to the material covered on it. We will interrupt the lectures with some frequency to give you questions and activities

aimed at assessing your understanding of the topic at hand and enhancing your mastery of the material. As indicated above, the PowerPoint presentations to be used in class will be posted in Blackboard® the night before the class.

**In-class activities:** In-class activities are geared to promote critical thinking, discussion, and enhanced learning. Most of the in-class activities will follow the form of a mini-quiz with multiple questions. Each question will appear on the screen in the PowerPoint presentation as well as in your iClicker cloud device and remain in view for as long as considered appropriate. You will be allowed to submit your answer using iClicker cloud polling for as long as the question is shown in the screen. For some in-class activities you will be asked to submit your own personal answer. For others, you will be expected to discuss your thoughts with your team members before submitting your answer. Finally, for others you will be expected to submit both, your own response, and a second response after a team discussion. Other formats may also be applied during the semester.

The activities are designed to help you go over the concepts being covered and apply them. **You will earn points applicable toward the final grade for every correct answer you have in the in-class activities.** Those points are **extra points**; therefore there is no penalty if you decide not to go for them. But I highly recommend you to try to get as many as you can as **THERE WILL BE NO CURVE** at the end of the semester. In addition to earning points for every correct answer, **participation points** will also be awarded every time you answer all questions given in a class (even if you answer incorrectly all of them!).

***NOTE:** The iClicker system allows for geolocation. You must be within the physical limits of the classroom for your answers to be counted by the system. This implies that you **MUST** allow localization services in the device used for answering the iClicker questions, at least during the timeframe associated with the class.*

**RATs:** You will take a total of **15 RATs**, one or more for each topic. Each RAT will be posted at least two days before the class session to cover that topic. **Once you log in to take the RAT you will have only 1 hour (60 minutes) to answer it.** Furthermore, **you will be allowed only one log-in.** The specific pages that you must read in preparation for each RAT are indicated on the [tentative schedule](#). They will also be indicated on Blackboard® within the instructions provided for each RAT.

**What will RATs look like?** RATs will be multiple-choice quizzes. There will be 10 questions per quiz. Some questions will be about vocabulary words, meanings of concepts, and straightforward facts covered in the reading material, while others will be aimed at assessing your understanding of the material and might require more analysis. ***IMPORTANT:*** Do not start a RAT unless you have already read the pages indicated in the instructions. Also, **make sure that you take ALL RATs using a RELIABLE COMPUTER with a RELIABLE NETWORK CONNECTION.** If the system kicks you out of Blackboard® while taking the RAT, you may **NOT** have the opportunity to log back in, your answers (if you have already provided some) may be lost, and **I will NOT have the ability to grant you access to the RAT for a second try.** Although only 10 out of the 15 RATs given throughout the semester will count toward your final grade (see “Grading Policy” below), I highly recommend that you take ALL RATs given throughout the semester as a way to maximize your odds of doing well in this class.

**Progress assessments (exams):** We will have four (4) progress assessments (i.e., exams) and a **cumulative** final exam. These exams will test your **understanding and your ability to APPLY** all material covered in the classes and videos that preceded the test, but not including the material already tested. **The only cumulative test will be the final exam,** which will cover all the content covered during the semester. All exams will consist of multiple-choice questions that you will answer online **using a computer and the Respondus LockDown Browser application pre-loaded on it.** To allow you to familiarize yourself with the Respondus LockDown Browser, a brief mock exam will be provided on Blackboard at least a week before the first exam. See the [tentative schedule](#) for this course for the expected dates of the exams. If you choose not to take the mock exam and then have issues during the exam related to not having properly installed the Respondus LockDown Browser in your laptop before the exam, you may see your exam time substantially decreased and you will not be given a time extension, nor have the right to re-schedule the exam.

Unless specifically indicated by the instructor, all exams will be given within the proctored environment of the classroom. The only exception to this rule is if you are already registered with the CASS, in which case you will be allowed to take the exam using the Respondus Monitor within the Respondus LockDown Browser platform, which requires the use of a functional camera and a microphone.

***NOTE:** Use of the Responds Monitor will require you to perform a proper environment check to ensure that no other computers, notes, or devices are within your reach while taking the exam. If the environment check that you perform does not comply with the required conditions indicated in the specific instructions given, you will automatically lose 20 points from your grade (that is, 40 points from the 100 points at play in the exam).*

**FastPass GROUP ACTIVITIES:** A week before every progress exam, you will be required to submit the “*FastPass* to the exam” group activity. One activity should be submitted per group. The specific dates for submitting the FastPass group activity are indicated on the [tentative schedule](#). The FastPass group activities are geared towards helping you create an easy-to-follow cheat-sheet that will make it substantially easier for you to get ready for the exam. The FastPass group activities will be submitted using specific links created within Blackboard and both, the “questions” and the links will become visible during the first week of content for the exam associated to them.

**NOTE:** There are two definitions of a cheat-sheet. 1 : a sheet containing information (such as test answers) used secretly for cheating. 2 : a written or graphic aid (such as a sheet of notes) that can be referred to for help in understanding or remembering something complex. We are using this term in agreement with the second definition. You are not allowed to use the FastPass, nor any other type of cheat-sheet, during the exams (**SEE CLASS POLICIES**).

#### **V. GRADING POLICY:**

Your grade will be determined on the basis of a comprehensive assessment of your skills using the following elements.

- 1) **Progress assessments:** A total of four exams will be administered throughout the semester, each worth 100 points. **Your best scoring exam will count double** (i.e., 200 points) toward your final grade. Take advantage of this great opportunity and try your best to get a high score in at least one of the exams. **Note:** Be aware that **by far the main focus of the exams will be material covered in class and/or in the videos**, including any material not covered in the book. Your lowest scoring exam will be replaced by your score in the final exam unless you score lower in the final exam than in all other exams, in which case no grade replacement will occur. If you miss any of the exams, you will lose this grade replacement. **Important:** see class policies about missing exams.
- 2) **RATs:** A total of **15 RATs will be administered** on Blackboard®, of which **only 10 will be counted toward your grade. The 5 lowest scores will be dropped.** The [tentative schedule](#) indicates when RATs will be administered; however, keep in mind that such schedule is subject to change. The RATs will be posted 2 days prior to the class session in which the topic will be covered and **will become inaccessible 1 hour before class. You will have access to the RAT only once and you will have only 60 minutes to take the quiz.** Your score will become available after the deadline for the RAT. Your final RAT score will be the total of the 10 highest RAT scores multiplied by 2, for a maximum total of 200 points.
- 3) **In-class activities:** As indicated above, in-class activities will give you **extra points** toward your final grade and your answers will be collected using **iClicker cloud** polling. The maximum number of points to be given for the in-class activities is 100 and will be given to the student (or students) who score the highest number of points. The points given to all other students will correspond to the fraction of their score as compared to the points achieved by the top scorers. For instance, if John Doesgreat is the student with the highest number of points, and he gets 400 points in the in-class activities, then John Doesgreat gets 100 points toward his final grade for in-class activities. If Peter D'Slacker only gets 100 points in the in-class activities, which corresponds to 1/4<sup>th</sup> of the points obtained by John Doesgreat, then he would only get 25 points toward his final grade for in-class activities. As for the value of any given question, correct answers can be worth anywhere between 2 and 6 points, as decided by the instructor based on the level of difficulty associated to the question; incorrect answers will not earn any points. In any given class session, students who provide an answer to all questions, or miss answering only one question, will receive 6 points for participation. A direct conclusion derived from this system is that, while you may know how many iClicker points you have, it will be pretty much impossible for you to know how many points toward your final grade you have. It is also evident that your best bet to maximize the number of points you get out of the in-class activities is to try your best at answering correctly every question presented, but even if you are not sure of your answer you should answer all questions. Nevertheless, please keep in mind that your main concern during the in-class activities should be understanding the questions and figuring out the best approach to answer them correctly, not the number of points obtained (i.e. you should focus on learning & understanding the material, not on getting extra points; if you UNDERSTAND the material, KNOW the main concepts and the associated details required, and know how to approach the questions, YOU WILL GET A GOOD GRADE). **You are highly encouraged to sit in close proximity to the other members of your team so that you may be able to discuss with them the answers to the in-class activities.**
- 4) **FastPass Group Activities:** One week before every exam you will be required to submit the FastPass group activity. Only one should be submitted per group. Each FastPass group activity will be worth 25 points. Therefore, the FastPass group activities will contribute 100 points toward your final grade. The FastPass group activities will be graded by the Lecture TA (Rebeca Orozco). The grades and feedback related to the FastPass activities will be provided via Blackboard a few days before the corresponding exam.

- 5) **Final Exam:** A cumulative final exam worth 200 points will be administered during finals week at the date and time indicated on page 11. This exam will be taken by everyone (***EVEN IF YOU HAVE OBTAINED OUTSTANDING GRADES IN EVERY EXAM*** throughout the semester) and can be used to replace your lowest exam grade. If your grade on the final is lower than your lowest exam grade, no replacement will occur.

The laboratory component for this class is **fully independent** and will be graded independently from the lecture.

Therefore, the **GRADING SYSTEM** is as follows:

Exams	400 points (4 exams/100 points each)
Best Scoring Exam	100 points
RATs	200 points (15 quizzes/20 points each, 5 lowest scores dismissed)
FastPass Group Activities.	100 points (4 FastPass group activities/25 points each)
Final Exam	200 points
<b>Subtotal:</b>	<b>1000 Points</b>
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In-class activities	100 points maximum (These are EXTRA points.)
<b>Actual total:</b>	<b>1100 Points</b>

The final grade equivalency will be as follows:

A = 896 points and above	(90-100%)
B = 796 - 895 points	(80 - 89%)
C = 696 - 795 points	(70 - 79%)
D = 596 - 695 points	(60 - 69%)
F = 595 points and less	(59% and below)

**Please note that a student must earn a grade of C or better to receive credit toward graduation and no curves will be applied.**

I do round off. That's why 896 points is an "A" but 895 points is a "B". I do not push 895 points to an "A" because you have several opportunities to improve your grade (the 5 lowest RATs are dropped, your best scoring exam counts twice, the final can replace your lowest exam grade, and in-class activities can give up to 100 extra points). This same policy is true for all other grades (i.e., 795 is C, 695 is D, and 595 is F).

Grades are **not** based on a curve. Everyone will receive a grade that is reflective of the effort put into the course, the knowledge learned during the course, and the skills acquired during the course. **You EARN your grade; I don't give you a grade.**

## **VI. CLASS POLICIES:**

**MISSING EXAMS:** If you know ahead of time that you will not be available to take an exam because of your required participation in a school-related activity (including participating in interviews for a professional or graduate program, or participating in a scientific meeting or symposium), notify me and I will schedule you to take the exam **one day before the scheduled date with no penalty** (important: No earlier dates will be offered without exception). However, you may have a slightly different exam from that offered to the rest of the class. **If you can't take the exam the day before, then the next exam will count double toward your grade; however, you will lose the right to have your lowest exam grade substituted with the final exam.** If you miss an exam due to medical reasons (serious disease, a medical emergency) and you can provide justification (with PROOF) for your absence, **the next exam will count double toward your final grade. However, doing so will prevent you from having your lowest scoring test replaced by the final exam. If you miss the following exam (the one that should count double), then your grade in both exams will be zero. If you miss an exam and cannot provide justification, then you will get a ZERO in that exam and this grade will NOT be replaced by the final exam as you will also lose the right to have your lowest scoring test replaced by the final exam.**

Each exam grade will be posted in Blackboard® right after you submit it or soon thereafter (the day of the exam). If you don't see a grade associated to your exam by the day after, you must contact the instructor to inquire about your exam, and you **MUST** do so within the following five days. If you don't, it will be understood that you missed the exam and the policies indicated above related to missing exams will be followed.

**IMPORTANT:** The computer system that you use for your exams matters. Taking an exam with a faulty computer will only add to the stress of the exam and may drastically affect your performance. Therefore, if you know that you have a

faulty computer, that is, one that crashes frequently, has issues maintaining connection with the WiFi network used at UTEP, or has a faulty battery that loses its charge very quickly, I **highly encourage you to get a loaner from the library**. If you do so, please indicate that you will be using it to take an exam using the Respondus LockDown Browser. This will allow you to be assigned a system with a pre-installed and fully functional version of the Respondus LockDown Browser. The policies used for loaner units changes frequently, so I also encourage you to inquire early during the semester to make sure you are fully aware of the timeframes associated to loaners (how early you can check it out and whether reservations are needed). It is my understanding that there are several iPads available and the Respondus LockDown Browser works quite well in iPads.

**ATTENDANCE:** Class attendance is **not** be required. However, **if you want to be able to participate in the in-class activities and accumulate the extra points associated to them, you must be physically present in the classroom (see note about geolocation above)**. The activities conducted in class **cannot** be made up at a later date. Also keep in mind that exams will be based mostly on the material covered in class and in the movies, and that special attention will be given to the in-class activities (there will be many questions related to them in the exams).

**iCLICKER CLOUD POLLING:** iClicker cloud polling, the polling system we will use this semester, allows you to answer the in-class activities using any “smart” personal device you may have at hand (smartphone, laptop, or tablet). **We will use iClicker polling starting on day one of this course**, so please **register for the course ahead of time**. To find our course, you can use either “Rosas-Acosta” or “Molecular” as queries for your search once you have entered the UTEP iClicker portal online.

**NETIQUETTE:** As we know, sometimes communication online can be challenging. It’s possible to miscommunicate what we mean or to misunderstand what our classmates mean given the lack of body language and immediate feedback. Therefore, please keep these netiquette (network etiquette) guidelines in mind for any online communication used during our course (extra office hours may be offered via Zoom). Failure to observe them may result in disciplinary action.

- Always consider audience. This is a college-level course; therefore, all communication should reflect polite consideration of other’s ideas.
- Respect and courtesy must be provided to classmates and to the instructor at all times. No harassment or inappropriate postings will be tolerated.
- When reacting to someone else’s message, address the ideas, not the person. Post only what anyone would comfortably state in a face-to-face situation.
- Blackboard is not a public internet venue; all postings to it should be considered private and confidential. Whatever is posted in these online spaces is intended for classmates and professor only. Please do not copy documents and paste them to a publicly accessible website, blog, or other space.

**HONORS CREDIT:** At this point, it is not clear to the instructor whether there will be an option to take this class for honors credit. If you are interested in exploring this possibility, please contact the Honors Program and, if available, give me a signed Honors Contract form as soon as possible. Honors students will be required to get a final grade of A in the course, to participate in one additional activity to be scheduled during the semester, and to take an additional test with open-ended questions. There is no penalty whatsoever for honors students who fail to meet the requirements to receive honors credit.

**ACADEMIC DISHONESTY:** It is the policy of the University of Texas at El Paso that academic dishonesty is a completely unacceptable mode of conduct and will not be tolerated in any form. To prevent dishonesty during our exams, you will be required to use the Respondus LockDown Browser platform for **ALL** of our exams. You will also be asked to bring only your computer with you to your desk, leaving all other belongings on the periphery of the classroom. You should **NOT** have a cell phone with you while taking an exam. If you are found using a cell phone during an exam, you will receive a grade of ZERO in that exam and you will lose the right to grade substitution. Any other form of academic dishonesty while taking an exam will have the same outcome.

Students who are allowed to take exams outside the classroom (such as CASS registered students) will require to use the Respondus Monitor within the Respondus LockDown Browser platform, which **will require your to have a functional camera and a microphone**. **Your face must be clearly visible while taking an exam**. You should not move your arms away from the visible area for the camera and you should avoid substantial changes in your posture. Any suspicious movement or activity will trigger your exam to be flagged, which will be followed by a close review of the full recording associated to your exam. If it is apparent that you attempted to use extra non-allowable material while taking an exam (such as a cell phone, or by talking to someone), you may be sanctioned for academic dishonesty. Potential consequences of this include **receiving a grade of zero in the exam in which the misconduct occurred**.

**DISABILITIES:** The University is committed to providing reasonable accommodations and auxiliary services to students, staff, faculty, job applicants, applicants for admissions, and other beneficiaries of University programs, services and activities with documented disabilities in order to provide them with equal opportunities to participate in programs, services, and activities in compliance with sections 503 and 504 of the Rehabilitation Act of 1973, as amended, and the Americans with Disabilities Act (ADA) of 1990 and the Americans with Disabilities Act Amendments Act (ADAAA) of 2008. Reasonable accommodations will be made unless it is determined that doing so would cause undue hardship on the University. Students requesting an accommodation based on a disability must register with the UTEP Center for Accommodations and Support Services (CASS). Contact the Center for Accommodations and Support Services at 915-747-5148, or email them at [cass@utep.edu](mailto:cass@utep.edu), or apply for accommodations online via the CASS portal.

*Please notice that many in-class activities and questions in our exams include the use of different colors to label different parts of figures and diagrams. If you are color-blind, please let the instructor know at the beginning of the semester.*

**CLASS RECORDINGS:** The use of recordings will enable you to have access to class lectures, group discussions, and so on in the event you miss a class meeting due to illness or other extenuating circumstance. Our use of such technology is governed by the Federal Educational Rights and Privacy Act (FERPA) and UTEP's acceptable-use policy. A recording of class sessions will be kept and stored by UTEP, in accordance with FERPA and UTEP policies. Your instructor will not share the recordings of your class activities outside of course participants, which include your fellow students, teaching assistants, or graduate assistants, and any guest faculty or community-based learning partners with whom we may engage during a class session. You may not share recordings outside of this course. Doing so may result in disciplinary action.

#### **COVID-19 PRECAUTIONS:**

- You must STAY AT HOME if you (1) have been diagnosed with COVID-19, (2) are experiencing COVID-19 symptoms, or (3) have had recent contact with a person who has received a positive SARS-CoV-2 test. **Under no circumstances should anyone come to class when feeling ill or exhibiting any of the known COVID-19 symptoms.** If you are feeling unwell and are unable to perform the expected activities even from home, please let me know as soon as possible. Students are advised to follow CDC guidance to minimize the risk of infection.
- If COVID-19 is a concern for you or any of your family members, you are HIGHLY ENCOURAGED to wear a face covering over your nose and mouth at all times in this class. Please note that should COVID-19 conditions deteriorate substantially in the City of El Paso, we may need to change the way course activities are performed.

The Center for Disease Control and Prevention recommends that people in areas of substantial or high COVID-19 transmission wear face masks when indoors in groups of people. The best way that Miners can take care of Miners is to get the vaccine. If you still need the vaccine, or a booster, or for more information about the current infection rates, testing, and vaccinations, please visit [epstrong.org](http://epstrong.org)

**GENERAL RESOURCES AND ASSISTANCE:** UTEP provides a variety of student services and support:

- Technology Resources  
Help Desk: Students experiencing technological challenges (email, Blackboard, software, etc.) can submit a ticket to the UTEP Helpdesk for assistance. Contact the Helpdesk via phone, email, chat, website, or in person if on campus.
- Academic Resources  
UTEP Library: Access a wide range of resources including online, full-text access to thousands of journals and eBooks plus reference service and librarian assistance for enrolled students.  
University Writing Center (UWC): Submit papers here for assistance with writing style and formatting, ask a tutor for help and explore other writing resources.  
Math Tutoring Center (MaRCS): Ask a tutor for help and explore other available math resources.  
History Tutoring Center (HTC): Receive assistance with writing history papers, get help from a tutor and explore other history resources.  
RefWorks: A bibliographic citation tool; check out the RefWorks tutorial and Fact Sheet and Quick-Start Guide.
- Individual Resources  
Military Student Success Center: Assists personnel in any branch of service to reach their educational goals.  
Center for Accommodations and Support Services: Assists students with ADA-related accommodations for coursework, housing, and internships.  
Counseling and Psychological Services: Provides a variety of counseling services including individual, couples, and



group sessions as well as career and disability assessments.

**COPYRIGHT STATEMENT FOR COURSE MATERIALS:** All materials used in this course are protected by copyright law. The course materials are only for the use of students currently enrolled in this course and only for the purpose of this course, unless otherwise determined by the instructor. Dissemination of any of the materials developed by the instructor by anyone other than himself is prone to legal prosecution and monetary liability.

**VII. TENTATIVE SCHEDULE: Please be aware that this schedule is subject to change**

Ses sion	DATE	Topics to be covered	Book pages (8 <sup>th</sup> Edition) to be covered in class	Book pages (8 <sup>th</sup> Edition) you MUST READ for the RATs*	RATs & FastPass	Movies <sup>△</sup>	Podcast <sup>◇</sup>	
1	Tuesday, 23Aug2022	Introduction, syllabus and background check (quiz)					Episode 1	
2	Thursday, 25Aug2022	Chromosomes & Chromatin	205-213	205-213	RAT#1	Understanding the Nucleosome	Episode 3	
3	Tuesday, 30Aug2022	Cellular Genomes	187-205	187-205	RAT#2	Movie 1	Episode 4	
4	Thursday, 01Sep2022	DNA Replication - Basic processes	215-232	215-232	RAT#3	Movie 2	Episode 6	
5	Tuesday, 06Sep2022	DNA Replication - Basic processes (continuation) & replication of telomeres	215-232 (continuation)					
6	Thursday, 08Sep2022	DNA Repair	232-242	232-242	RAT#4; FastPass 1	Movie 3; Movie 3A		
7	Tuesday, 13Sep2022	DNA Repair (continuation) & Recombination & Rearrangements	232-250			Movie 4; Movie 5; In Class Activities Exam 1 Frida & Tabitha		
8	Thursday, 15Sep2022	<b>EXAM 1 (Make sure to install Responds LockDown Browser in your computer ahead of time; take mock exam to make sure everything works fine for you; consider whether you will need a loaner &amp; if so, contact the library to find out the timeframe needed)</b>						
9	Tuesday, 20Sep2022	Transcription - Basic Mechanisms	253-265	253-265	RAT#5	Movie 6	Episode 9	
10	Thursday, 22Sep2022	Transcription - Regulation in Eukaryotes	288-312	288-312	RAT#6	Movie 7		
11	Tuesday, 27Sep2022	Transcription - Chromatin Structure & Methylation	288-312 (continuation)			Transcription Mnemonics - by Rebeca Orozco & Monet Woodhouse		
12	Thursday, 29Sep2022	Transcription - RNA Processing & Turn-over	265-282	265-282	RAT#7	Movie 8		
13	Tuesday, 04Oct2022	Transcription - RNA Processing & Turn-over	265-282 (continuation)			Transcription Factors - how they work & 2 examples: p53 & E2F		
14	Thursday, 06Oct2022	Translation - Players, Process, & Regulation	315-331	315-331	RAT#8; FastPass 2	Movie 9	Episode 10	
15	Tuesday, 11Oct2022	Translational Regulation (continuation); Protein Folding & Post-Translational Modifications of Proteins	315-331 (continuation), 141-142, & 331-349	141-142 (antibodies & immunoblotting) & 331-349	RAT#9			
16	Thursday, 13Oct2022	<b>EXAM 2 (follow the same guidelines as for Exam 1)</b>						
17	Tuesday, 18Oct2022	Post-translational Modifications of Proteins (continuation)	331-349 (continuation)					
18	Thursday, 20Oct2022	The Nucleus - Nuclear Envelope, Nuclear Pores, Nuclear Import & Export Nuclear organization & compartments	355-369	355-369	RAT#10	Movie 10 & Movie 11; Movie 25		

19	Tuesday, 25Oct2022	Protein Targeting & Insertion into the ER, Folding & Processing	383-412	383-412	RAT#11	Movie 12; Movie 13; How do proteins reach their appropriate location in the cell
20	Thursday, 27Oct2022	The ER & Golgi - Lipid & Protein Sorting Vesicular Transport	383-412 (continuation)			Movie 14; Movie 15; Movie 16
21	Tuesday, 01Nov2022	Plasma Membrane - Constituents & Transport of Small Molecules	501-528	501-528	RAT#12	Movie 17; Figuring out the likely cellular localization of proteins
22	Thursday, 03Nov2022	Plasma Membrane - Facilitated Diffusion & Active Transport	501-528 (continuation)		<b>FastPass 3</b>	Movie 18; Movie 19
23	Tuesday, 08Nov2022	Plasma Membrane - Endocytosis & the LDL Receptor	528-535			Movie 20
24	Thursday, 10Nov2022	<b>EXAM 3 (follow the same guidelines as for Exam 1)</b>				
25	Tuesday, 15Nov2022	Cell Cycle - Phases, Regulation & Regulators	603-631	603-631	RAT#13	Movie 21; Cell cycle analysis by flow cytometry
26	Thursday, 17Nov2022	Cell Cycle - Cyclins, Cdks, Check Points, & M Phase	603-631 (continuation)			Movie 22
27	Tuesday, 22Nov2022	Apoptosis	637-667	637-667	RAT#14	Movie 23; Cell Cycle Arrest & Cell Death an example of how it occurs
	Thursday, 24Nov2022	<b>THANKSGIVING BREAK - University is closed</b>			<b>FastPass 4</b>	
28	Tuesday, 29Nov2022	Cancer - General Properties and Definitions; Oncogenes & Tumor Suppressorts	669-697	669-697	RAT#15	Movie 24; How to prepare for the final exam - Molecular Cell Biology BIOL3314
29	Thursday, 01Dec2022	<b>EXAM 4 (follow the same guidelines as for Exam 1)</b>				
30	Thursday, 08Dec2022	<b>Final Exam (10:00 AM-12:45 PM) - follow the same guidelines as for Exam 1 BE AWARE - THIS EXAM IS CUMULATIVE</b>				

\*The specific pages covered in each RAT correspond to the pages in “The Cell: A Molecular Approach”, 8<sup>th</sup> edition. Those pages don’t correspond to the pages in previous editions of the book and substantial changes have taken place during the years. In case of disagreement related to any question found on a RAT between the 8<sup>th</sup> edition and any previous edition of the textbook, the information contained in the 8<sup>th</sup> edition will be considered to be correct.

△The movies correspond to the movie numbers given to the different movies available at [The Molecular Cell Biology YouTube Channel](#). All of those movies were specially created by the instructor for this class and are fully available to you free of charge. To speed up your access to the movies, you may want to subscribe to the instructor’s YouTube channel, although this is not required at all.

◇The podcast indicates the Episode number under The Molecular Cell Biology Podcast. The podcast, created by the instructor, is hosted at Podbean and can be accessed [through this link](#).

Please be aware that new YouTube videos and new episodes of The Molecular Cell Biology Podcast will be released throughout the semester. Newly released videos and podcasts will be announced through our Blackboard shell. Check it periodically, at least once daily.