

BIOL843- Cell Structure and Function Spring 2024- 3 Credits

Instructor Information

Instructor: Dr. Surabhi Chandra

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Textbook and Computer Requirements

Required Text: Molecular Biology of the Cell (7th edition); ISBN 978-0393884821

Computer: You will need to have an up-to-date browser, operating system and some additional software on your computer in order to take this class. Some of the documents in this course will be available in PDF form. If you do not have Adobe Acrobat Reader software on your computer, you can download it from <https://get.adobe.com/reader/>

Course Description and Objectives

Course Description:

This course will cover current topics in eukaryotic cell Biology including functions of the membrane, cell organelle functions, cell signaling, and the cell cycle. This course will also cover the involvement of specific cell organelles and cell functions in human diseases. In this course the emphasis will especially be on animal cells.

Course objectives:

1. Describe the basic properties of eukaryotic cells and their composition
2. List and describe functions of the major biological molecules
3. Describe the function and structure of cellular organelles
4. Describe DNA replication, repair, and expression
5. Describe protein synthesis, processing and regulation
6. Understand cellular signaling as it relates to specific human diseases
7. Understand organelle function as it relates to specific human diseases

Course Format, Access, and Attendance

Course Format:

Because this is a web-based course and conducted entirely online, it is extremely important that you **regularly check your UNK email and Canvas**. In this course students will demonstrate their level of achievement by completing tests, participating in discussion boards, and submitting assignments, which will be completed online.

Course Access: After accessing the course on Canvas, use the links on the left of the screen for syllabus, modules, lectures, discussions, quizzes, assignments, or additional resources.

Attendance:

Since this is an online course, "attendance" refers to checking announcements, reading the content, doing the activities, and submitting the assignments by the deadline. It is required that you should be logging in the course at least 3-4 times a week. The instructor can check if you have been accessing the course regularly or not. You are advised to allot specific times on several days of the week (MWF or TTh) towards this course similar to your regular in-class sessions. Print a copy of the schedule on the last page and paste it at a prominent place to keep track of deadlines.

Course Design

The course is outlined in the form of modules as mentioned below. Each module will entail reading the textbook chapters, watching the lecture videos, reading additional resources, and participating in a quiz. In addition to the quizzes, there will be mid-term and final exams. The details on these will be provided as per their schedule.

Modules: There will be 4 modules in this course (schedule on the last page) which are categorized based on the content covered.

Lecture Content: Lecture content including lecture notes, lecture videos, and additional material will be posted on Monday of each week. The content covered in these will be primarily from the textbook.

Quiz: Topics covered in the quiz will be announced on Canvas (Schedule on the last page). Content would include chapters covered in the week and additional reading materials as provided. Quizzes will open on Friday @ 8 am and due by Tuesday @ midnight. These will typically include multiple choice questions, true/false and fill in the blank type of questions. *Two of the lowest scores* from these quizzes will be dropped at the end of the semester.

Exams: These will include content for that module i.e., textbook chapters as well as extra referencing based on the topics covered. These exams will have both a timed-online (MCQ) component as well as a take-home short-answer/essay component. Final exam is NOT comprehensive.

Course Communication

Announcements: Announcements will be posted on Canvas. Please make sure to check them regularly, as they will contain important information regarding assignments, or class concerns.

Discussion Board:

Discussion Board will be used as a means of online communication between students and the instructor.

Original Post- Each module in this course would have a discussion board. You will be assigned to specific groups to participate in the discussion boards. Please read the material assigned and respond to the question posted. The length of the post must be minimum of 150-200 words with critical and thoughtful explanation of the topics. Support your post with relevant peer-reviewed articles. Original post is due by Friday @ midnight.

Reply to Postings- There will be a minimum of 2 responses that you are required to provide on other students' postings. These responses should not be limited to one word such as "bravo", "nice" or use internet lingo (LOL, ROFL etc.). Typical responses should be at least 2-3 sentences after carefully analyzing the post and providing your inputs. Responses are due by Sunday @midnight.

Grading - Each original post will be worth 7 points and responses will be 3 points (1.5 points each). Points will be deducted if original posts and responses are submitted within an hour of each other. Discussion boards are meant for interaction with your peers', hence continued participation is encouraged.

Coffee House: Since this is an online course, it is normal to have questions regarding assignments, tests, and lecture material. You can post these questions in the COFFEE HOUSE forum under Discussion Board. This will be an open forum where you can help each other.

****Format for Quizzes and Tests

Quizzes and tests will be given through Canvas. To take quizzes or tests through Canvas, you are required to have the **Respondus lockdown browser** downloaded and you **will need a web camera** for your computer: <https://download.respondus.com/lockdown/download.php?id=477439341%20>. There is more information on Canvas about Respondus. Unfortunately, this software will NOT work on a Chromebook or Linux computer, so you will need to prepare for this.

All quizzes and tests will be taken using the Respondus Lockdown Browser. Once you have it downloaded, you will use this to enter Canvas. You will open this browser, and it will take you to Canvas to take your quiz. You will need to complete the quiz or test in the time allotted. More information will be available on Canvas in the Announcement section.

Grades

Discussion board postings	50 points = 4 modules (10 points each) + Introduction (10 points)
Quizzes	80 points = 10 quizzes (10 points each) – 2 lowest (10 points each)
Exam	400 points = 4 exams (100 points each)

Total	530 points
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Grades will be assigned as follows:

- 100 – 90% - A grades (>98% = A+; 97-92% = A; 91-90% = A-)
- 89 – 80% - B grades (89-88% = B+; 87-82% = B; 81-80% = B-)
- 79 – 70% - C grades (79-78% = C+; 77-72% = C; 71-70% = C-)
- 69 – 60% - D grades (69-68% = D+; 67-62% = D; 61-60% = D-)
- 60% and lower – F grade

Grade Policy

- Final grades will be rounded up, i.e., 0.5 and higher would go to the next point.
- Since this is a graduate level course, I do not provide any extra credit opportunities.

Other Course Policies

Late Work: Late work will not be accepted. If you have an extenuating circumstance, please contact me before the assignment/work is due to make alternate arrangements. I will require documentation in such cases.

Dropping the Class: To avoid getting an F for the course, it is your responsibility to officially withdraw from the course prior to the deadline. Withdrawing from a class is done through your secure student account in MyBlue.

Receiving an Incomplete: An incomplete ("I") is issued only if circumstances beyond your control (for example, hospitalization during finals week) prevent you from completing the required work for the class by the end of the semester. The circumstances preventing you from finishing the class must have arisen *after* the withdraw deadline. An incomplete grade will give you an *extension* to complete outstanding work only; it is *not* an opportunity to "start over" in the class. A contract must be signed detailing a timeline for completing the work, and all outstanding work must be completed within one year or the "I" grade *automatically* converts to a failing "F" grade. The conversion of an incomplete grade to a failing grade is university policy and is not within the control of instructor.

Ethics and Behavior

You should be following the highest ethical, academic, and professional standards. The University's Academic Integrity policy is listed in Article VI of the Student Handbook. UNK Student Handbook or (<http://www.unk.edu/offices/reslife.aspx?id=2402>). Use of proper language and maintaining appropriate decorum is expected during the course. Discussion boards will be moderated, and any use of abusive/foul language will be dealt strictly and can result in expulsion from the university.

UNK Student Code of Conduct

Please review the student code of conduct (http://www.unk.edu/offices/reslife/Student_Handbook/). Anyone caught cheating will fail the course.

Students with Disabilities

It is the policy of the University of Nebraska at Kearney to provide flexible and individualized reasonable accommodation to students with documented disabilities. To receive accommodation services for a disability, students must be registered with the UNK Disabilities Services for Students (DSS) office, 175 Memorial Student Affairs Building, 308-865-8214 or by email unkdso@unk.edu

Academic Honesty Policy

Academic honesty is essential to the existence and integrity of an institution of higher education. The responsibility for maintaining that integrity is shared by all members of the academic community. To further serve this end, the University of Nebraska at Kearney has a policy relating to academic integrity.

[Graduate Academic Integrity Policy](#)

UNK Academic Calendar- Spring 2024

Please take a note of the deadlines for dropping or withdrawing from the course https://www.unk.edu/offices/registrar/academic_policies_handbook/Academic_Calendar.php
Last day to withdraw from one or more full-semester course for the term: April 19

Reporting Student Sexual Harassment, Sexual Violence or Sexual Assault

Reporting allegations of rape, domestic violence, dating violence, sexual assault, sexual harassment, and stalking enables the University to promptly provide support to the impacted student(s), and to take appropriate action to prevent a recurrence of such sexual misconduct and protect the campus community. Confidentiality will be respected to the greatest degree possible. Any student who believes they may be the victim of sexual misconduct is encouraged to report to one or more of the following resources:

- **Local Domestic Violence, Sexual Assault Advocacy Agency** 308-237-2599
- **Campus Police (or Security)** 308-865-8911
- **Title IX Coordinator** 308-865-8655

Retaliation against the student making the report, whether by students or University employees, will not be tolerated.

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Students Who are Pregnant

It is the policy of the University of Nebraska at Kearney to provide flexible and individualized reasonable accommodation to students who are pregnant. To receive accommodation services due to pregnancy, students must contact the Student Health office at 308.865.8218. The following links provide information for students and faculty regarding pregnancy rights. <https://thepregnantscholar.org/title-ix-basics/>

<https://nwlc.org/resource/faq-pregnant-and-parenting-college-graduate-students-rights/>

UNK Statement of Diversity & Inclusion

UNK stands in solidarity and unity with our students of color, our Latinx and international students, our LGBTQIA+ students and students from other marginalized groups in opposition to racism and prejudice in any form, wherever it may exist. It is the job of institutions of higher education, indeed their duty, to provide a haven for the safe and meaningful exchange of ideas and to support peaceful disagreement and discussion. In our classes, we strive to maintain a positive learning environment based upon open communication and mutual respect. UNK does not discriminate on the basis of race, color, national origin, age, religion, sex, gender, sexual orientation, disability or political affiliation. Respect for the diversity of our backgrounds and varied life experiences is essential to learning from our similarities as well as our differences. The following link provides resources and other information regarding D&I: <https://www.unk.edu/about/equity-access-diversity.php>

Military and Veterans Services

Military and Veteran Services assist veterans, service members, and their dependents with education benefits and academic and supporting resources. They serve as a liaison between students and the Veterans Administration and branches of the military. Contact the UNK Military and Veteran Services office at 308-865-8677 or visit their website for more information: https://www.unk.edu/offices/financial_aid/veterans_services/index.php

Additional Resources

******Tech Support:** Available through email at unkhelpdesk@unk.edu or phone 308-865-8363.

******Learning Commons (Tutoring):** The UNK Learning Commons offers support for this course! The Learning Commons, located on the 2nd floor of the Calvin T. Ryan Library, offers Subject Tutoring, the Writing Center, Success Coaching, and Language Support. These services are available to all UNK students in-person and on Zoom. The Learning Commons can help you with course content for select subjects, time-management skills, getting organized for class, and any type of writing project. To get the most out of your time with the Learning Commons, visit early and often! Contact the Learning Commons at 308-865-8905, unklearningcommons@unk.edu, or stop by in person. Website: www.unk.edu/lc

Weekly Schedule (Tentative)

Week	Dates	Module	Chapters Tested	Assessment
1	01/22-01/26	M 1	Chap 1- Cells, Genomes, and Diversity of Life	Quiz 1 (01/26-01/30) Chap 1
2	01/29-02/02	M 1	Chap 2- Cell Chemistry and Bioenergetics	Quiz 2 (02/02-02/06) Chap 2
3	02/05-02/09	M 1	Chap 3- Proteins	Quiz 3 (02/09-02/13) Chap 3
4	02/12-02/16	M 2	Chap 4- DNA, Chromosomes, and Genomes	EXAM 1 (02/12-02/19) Chap 1, 2, 3
5	02/19-02/23	M 2	Chap 5- DNA Replication, Repair, Recombination	Quiz 4 (02/23-02/27) Chap 4, 5
6	02/26-03/01	M 2	Chap 6- DNA to Protein	Quiz 5 (03/01-03/05) Chap 6
7	03/04-03/08	M 3	Chap 10- Membrane Structure	EXAM 2 (03/04-03/11) Chap 4, 5, 6
8	03/11-03/15	SPRING BREAK		
9	03/18-03/22	M 3	Chap 11- Membrane Transport	Quiz 6 (03/22-03/26) Chap 10, 11
10	03/25-03/29	M 4	Chap 14- Energy Conversion	Quiz 7 (03/29-04/02) Chap 14
11	04/01-04/05	M 4	Chap 15- Cell Signaling	EXAM 3 (04/01-04/08) Chap 10, 11, 14
12	04/08-04/12	M 4	Chap 15 contd.	Quiz 8 (04/12-04/16) Chap 15
13	04/15-04/19	M 4	Chap 16- Cell Cycle	NO QUIZ
14	04/22-04/26	M 4	Chap 16 contd.	Quiz 9 (04/26-04/30) Chap 16
15	04/29-05/03	M 4	Chap 18- Cell Death	Quiz 10 (05/03-05/07) Chap 18
16	05/06-05/10		Finals Week	FINAL EXAM (05/06-05/13) Chap 15, 17, 18

Discussion Board Schedule

Module	Topic	Due Date
M 1	Chap 1, 2, 3	Original: 02/09; Response: 02/11
M 2	Chap 4, 5, 6	Original: 03/01; Response: 03/03
M3	Chap 10, 11, 14	Original: 03/29; Response: 03/31
M 4	Chap 15, 16, 18	Original: 05/03; Response: 05/05