

Cell Biology BIOL 300 Sections 1 and 2

Fall 2021

Instructor information

Dr. Jani Lewis
Office hours: ISC 302
Wednesday – 9:30 – 11:00
Friday – 9:00 – 11:00
And by appointment
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Course Description

The main goal of this course is to allow you to have a clear and detailed understanding of the structure and functions of eukaryotic cells. The lectures will usually follow the textbook. We will note how faulty cellular mechanisms lead to human disease. Upon completion of the course, I expect you to possess solid background knowledge of the principles of cell biology as well as an understanding of emerging concepts of this exciting field. You will also gain insight into how scientists investigate the structure and function of cells.

Required Textbook

The required textbook is Essential Cell Biology, Alberts et al, 5th edition
Smackwork5 is also required.

Learning Objectives

Students who complete this course successfully will be able to:

- Describe the basic facts, concepts and fundamental principles in cell biology
- Apply those facts, concepts and principles to current biological questions of today.
- Describe cell structure and how it relates to cell functions.
- Describe experimental techniques in cell biology
- Describe cell membrane and membrane transport
- Describe cellular compartmentalization and how material is sorted and transported between intracellular compartments.
- Describe how mis-regulation of cell signaling leads to cancer and other diseases.
- Describe regulation of cell cycle and apoptosis

In class and online (annotated) lectures and powerpoint slides

While the lectures are not presented in a “flipped” format, I am going to use some of what I learned from our time of COVID to streamline this course. This means that some of the lectures and assignments will be done on your own time outside of class. The reasoning is that with most chapters there is introductory material that you may have had previously but will be in just a bit more detail than you learned prior to this course. It is very important for you to understand that much of the prerecorded material will not be presented in class but that you should at least watch it one time through before coming to class for the chapters presented that week.

The face-to-face portion of the class will meet Tuesday and Thursday, at which time there will be a lecture of the remaining parts of the material and will incorporate a discussion of parts of primary journal articles that you should read ahead of time and try to answer on your own or in small groups. The in-class time is also when you can ask questions related to the material presented in the recorded lectures and in the Smartworks.

Groups and “Question of the Day” (QD).

Sometime during almost every class period you will be given a question to do as a group. This question will be collected and count towards your test grades. It is important to recognize that some of these questions may end up in some form on your exams. If you have been there for every QD (-1) during that testing period you will receive 2% extra credit on your exam. The -1 means that you can miss one class per quarter and still get the 2% extra credit on your exam. When considering this extra credit here is an example of how it would work. If there are 40 points available on an exam and you obtained a score of 30 points your score would be a 75 % ($30/40 \times 100$). If you did all the bonus questions then you would get 2% added to this score which would give you a 77%.

Everyone from your group who participates must sign the answer sheet in order to receive credit for the question. Any group who submits a group-member's name that is not present at the time the question was done will lose all credit for that question.

Office hours

Wednesdays - 9:30 - 11:00 am

Fridays 9:00 - 11:00 am

Office hours this year will be in ISC 302 which is a laboratory on the third floor of the ISC. The ventilation is much better in the lab and also holds more seats. If you are feeling ill or cannot come to the office hours but want to meet with me, please email me and we can set up a zoom link at another time.

Problem Sets and/or Journal article assignments

Problem sets and/or primary journal articles with accompanying questions will be assigned each week. The topics will be related to the material we are covering in the lectures. These problem sets and/or journal article questions will be discussed during class time and it is expected that you do the work ahead of the class time. Answers to the questions will not be posted so it is imperative that you come to class to make sure your answers are correct. These sessions and, in particular, the article questions are meant to 1. Help you understand how to read a journal article; 2. Become more familiar with a given topic and; 3. Learn about the methodology that is used to study the structure and function of cells. For these sessions a quiz will be administered that covers the problem sets and/or paper questions. You will have 30 to 45 minutes to take the quiz (depending on the length of the quiz). Quizzes will be opened the weekend after class and remain open for 14 hours. These are individual quizzes and you should not confer with other students to answer the questions. You can use your notes from the paper and the class during the quiz.

Smartworks assignments

You will be assigned topics within the Smartworks which you must complete to receive credit. Smartworks also has many resources including links to great animations that will aide you in understanding the material. Please note that you must purchase access to Smartworks to complete these assignments. This access can be purchased through the bookstore or directly from the publisher (which I believe may be cheaper than via the bookstore). Here is the link to the publishers webpage:

<https://digital.wwnorton.com/ecb5>

Exams

There will be 4 exams including the final. None of the exams will be cumulative. Exams will cover lecture topics in class, Smartwork assignments and parts of primary journal articles and problem sets we go over during the period between exams. Please remember that looking over your powerpoints by themselves will not adequately prepare you for exams. You should utilize your notes taken during class, any questions I post in the module that is associated with the lecture and the relevant chapter material in the text to strengthen your understanding of what is being covered. Exams will be largely made up of multi-part short answer questions and will challenge you to integrate and apply what you have learned in class and on assignments. There will also be a few multiple choice questions on each exam. Exams will be given during class time. If you have accommodations for extra time or other accommodations you will have to alert me to this and schedule time in the testing center at least 3 business days before the in class exam.

Grading

Exams (4 exams including the final)	75%
Smartworks	12.5%
Quizzes related to in class discussions of papers and problem sets.	12.5%

Grading Scale

The following scale will be used to calculate final grades. Student point totals or grading scheme maybe adjusted to reflect course difficulty or section differences (instructor's discretion).

A = 100-93%	A ⁻ =92.9-90%	B ⁺ = 89.9-87%	B = 86.9-83%
B ⁻ = 82.9-80%	C ⁺ = 79.9-77%	C = 76.9-73%	C ⁻ = 72.9-70%
D = 69.9-60%	F = 59-0%		

How to get the most out of this course

- Take charge of your own learning. Study for understanding of the concepts, not just memorization of "facts".
- Read assigned chapters and watch the annotated lectures. Make notes as you do and pay careful attention to the questions that I ask during lecture and the questions to think about that I post for each chapter.
- Watch the recommended videos that come with your book or those that I provide links to in the modules.
- Come to class each week, preferably after looking over the chapter at least once, but even if you miss doing that before class, come to the class each week. This will help you stay on top of the work and not leave it until the last minute before the exam.
- Do the Smartworks assignments in the order they are listed in the modules. Keeping up with these assignments as you go through the chapter material reinforces your learning and also reduces your stress for getting these items finished in advance of when they are due.
- Be alert and take good notes during class. Go over your notes after class and make extra notes from your reading. Look at any questions I place in each module and consider these while reading the material and watching the annotated lectures.
- Consider studying with other students outside of class to discuss the material and prepare for exams.
- Read the questions related the primary articles, read through these articles and try to answer these questions on your own first and then utilize your fellow students to help answer these questions.
- Get help when necessary. Feel free to email me anytime and set up a meeting if you need any help. It is worthwhile to come to office hours even if you only have one question. Your one question might help other students who come to office hours at that time and vice versa. It is like an extra tutoring/studying session.

IMPORTANT POLICIES

COMMUNICATION

Set up Canvas to provide daily updates via email or text message in order to ensure that you receive any updates or changes to the schedule. Check the announcements section regularly. Besides office hours, the fastest way to get in touch with me is via e-mail. Please include your name (not just your email address) and the course name or number (Biol 300 and section no) in all e-mails sent to me. To preserve work-life balance, I reserve the option to delay answering emails sent after 5 pm or on the weekends until the start of the next business day.

MAKEUP EXAMS

I will not provide makeup exams unless you have a valid excuse such as an illness or a family emergency. To be fair to everyone in class and to follow departmental and university policies, documentation for such emergencies will be required. If you miss an exam for any of the above stated exceptions, you must contact me as soon as possible to make alternate arrangements.

ACCESSIBILITY

SUNY Geneseo is dedicated to providing an equitable and inclusive educational experience for all students. The Office of Accessibility will coordinate reasonable accommodations for persons with documented physical, emotional, or cognitive disabilities, as well as medical conditions related to pregnancy or parenting. Students with letters of accommodation should submit a letter to me at the beginning of the semester and discuss specific arrangements. Please contact the Office of Disabilities <https://www.geneseo.edu/accessibility-office>

- *Student responsibility:* Please submit your letter of accommodations to me at the beginning of the semester and make an appointment to discuss arrangements.
- *Instructor responsibility:* I am committed to working with you to figure out how to create a just learning environment while meeting the learning outcomes of the course. Unless you communicate otherwise, I will keep all accommodations confidential.

SAFEGUARDING YOUR MENTAL HEALTH

Diminished mental health, including significant stress, mood changes, excessive worry, or problems with eating and/or sleeping can interfere with optimal academic performance. The source of symptoms might be strictly related to your course work; if so, please speak with me. However, problems with relationships, family worries, loss, or a personal struggle or crisis can also contribute to decreased academic performance.

SUNY Geneseo provides mental health services to support the academic success of students. Counseling Services, a part of the Lauderdale Center for Student Health & Counseling, offers free, confidential psychological services to help you manage personal challenges that may threaten your well-being.

In the event I suspect you need additional support, I will express my concerns and the reasons for them, and remind you of resources (e.g., Counseling Services, Career Services, Dean of Students, etc.) that might be helpful to you. It is not my intention to know the details of what might be bothering you, but simply to let you know I am concerned and that help, if needed, is available. Getting help is a smart and courageous thing to do for yourself /and /for those who care about you.

POLICY EXCEPTIONS AND CHANGES

Policies are designed to address common issues and concerns. I cannot anticipate every possible problem that may arise, and therefore policies can have limits and exceptions! If you are experiencing problems in completing class work for any reason, please make an appointment to talk with me. Please note that in light of the current pandemic it is also possible that I will have to return to a fully online format. In that case policies may change again and I will post those changes if and when they occur.

PROFESSIONALISM

Policy for this semester requires all unvaccinated students wear a face mask in instructional spaces including classrooms, lecture halls, and laboratories, and all common areas including residence halls and all buildings. There is misinformation circulating about exemptions from face mask requirements connected to interpretations of the Americans with Disabilities Act (ADA). At this time, the ADA does not cite a blanket exemption from face covering requirements for individuals with disabilities, and has not issued documentation to support this exemption (e.g., "ADA cards"/letters/flyers). Please refer to the [ADA and Facemask Policy Guide \(Links to an external site.\)](#) for more information. Please also note that there is absolutely no drinking or eating in the classroom. If you have health related issues that require you to eat and/or drink during the in class portion, I ask that you leave the classroom temporarily to do so. You will not be penalized for doing so. Thank you for your cooperation in this matter.

Anytime you feel ill we ask that you do not come to the in class sessions. If you are feeling ill please email me as soon as possible so we can discuss what was done in class and how you can possibly make up this work.

For your scheduled class please arrive on time, stay through class, turn off your cell phone (including vibration mode), and use laptops and other technology only for class-related activities. It is understood that the continuing development of new technology can be beneficial to the process of education. For this reason, laptops and smartphones are permitted for note-taking and viewing classroom materials. Unacceptable classroom use of technology includes, but is not limited to social media websites, e-mail, playing games, and cell phone photography. These diversions not only reduce your class participation, they can also distract those around you. If you disrupt the lecture or are distracting others around you, you may be asked to leave. If the behavior of other students around you is affecting your learning please tell us.

If you have an emergency for which you need your cell phone to be turned on, talk to me before the beginning of in class sessions. Only then will you not be asked to leave if your cell phone rings/vibrates during the in class session.

APPEALING GRADES

Any graded work may be submitted for re-evaluation along with a written appeal submitted via email and should include a brief explanation of your concerns, including your understanding of the test question or assignment directions and why you believe your work meets the

requirements. Appeals should be sent in within one week of receiving the graded work. When you submit your appeal, we will schedule an individual conference to go over my response.

ACADEMIC DISHONESTY

Academic dishonesty devalues the work of other students. Cheating on exams is a serious breach of trust and will be treated accordingly. Examples of cheating on tests include (but are not limited to) collaboration or communication with others in any form. Plagiarism is the misrepresentation of the originality of your work. Collaborating on a test will result in a failing grade for the test, and may result in a failing grade for the course. Ignorance of the policy or of the definition of cheating will not serve to excuse the behavior. Because academic dishonesty is defined in detail here, claiming ignorance of the policies cannot serve as an excuse. Should serious academic cheating be identified the procedures addressing these incidents are addressed in detail through the [Dean of Academic Planning and Advising's](#) webpage.

COPYRIGHT NOTICE

Many of the materials that are provided to students in this course have been created by myself or by the publisher of our textbook. Students would be best to assume that all course materials are protected by legal copyright. Copyright protection means that reproduction of this material is prohibited without the author's consent. Thus, students are prohibited from sharing or posting copyrighted material to any websites outside our course Canvas site. Students are also prohibited from reproducing material to be shared with other more limited groups (eg. sorority/fraternity test bank). Be aware that UUP (Union of University Professionals, the union representing faculty on this campus) is seeking to take legal action against these and other sites, and that posting or selling copies of materials to such sites may put a student in legal jeopardy.

Tentative Schedule for coverage of textbook material.

Date	In Class Activity	Unit	Chapter
08/31	Introduction to the course, chapter 1 lecture	1	Chapter 1
09/02	Continued discussion on Chapter 1 and 2.	1	Chapter 1 and 2
09/07	Thermodynamics, Free energy and Catalysts	1	Chapter 3
09/09	Thermodynamics, Free Energy and Catalysts continued	1	Chapter 3
09/14	Protein Folding and enzyme function	1	Chapter 4
09/16	Paper #1 – Protein folding and kinetics	1	Chapter 4
09/21	Paper #1 continued discussion – (protein folding and kinetics	1	Chapter 4
09/23	Exam #1	1	Chapters 1, 2, 3, 4
09/28		2	Chapter 11
09/30		2	Chapter 11
10/05		2	Chapter 12
10/07		2	Chapter 12
10/12	Fall Break, no class		
10/14		2	Chapter 15
10/19		2	Chapter 15
10/21		2	Chapter 15
10/26		2	Chapter 15
10/28	Exam #2	2	Chapters 11, 12, 15
11/02		3	Chapter 16
11/04		3	Chapter 16
11/11			Chapter 16
11/16		3	Chapter 16
11/18		3	Chapter 17
11/23		3	Chapter 17
11/09		3	Chapter 17
11/11		3	Chapter 17
11/16	Exam #3	3	Chapters 16, 17
11/18		4	Chapter 18
11/23		4	Chapter 18
11/25	Thanksgiving Break – no class		
11/30			Chapter 18
12/02		4	Chapter 20
12/07		4	Chapter 20
12/09		4	Chapter 20
12/14	No class, study day	4	Chapter 20
12/16	Section 01, 8:00 – 10:30 am EXAM #4	4	Chapters 18, 20
12/17	Section 02, 12:00 – 2:30 pm EXAM #4	4	Chapters 18, 20

- The schedule may change at the discretion of the instructor based on class progression.