

BIOLOGY 201 (002): FOUNDATIONS OF BIOLOGY: CELLULAR & MOLECULAR BIOLOGY

INSTRUCTOR:	Dr. Mary Konsolaki	EMAIL:	mary.konsolaki@njit.edu
OFFICE:	340D Central King Bldg.	OFFICE HOURS:	Virtual: Tue-Thu 2:00-3:00pm or by appointment
PHONE:	973-642-4975		
COURSE SCHEDULE:	Tue-Thu 11:00am-12:20pm	COURSE WEBSITE:	http://canvas.njit.edu
COURSE LOCATION:	Section 002 (CTR BALL A)	REMOTE STUDENTS:	Meeting Number: 120 221 8263 Password: fhTt5GYpt32

COURSE DESCRIPTION: This course surveys the chemical components and structure of the cell and methods of study; thermodynamics and metabolism; membrane biology, energy utilization and transfer; protein and nucleic acid structure and function; transcription, translation, and genetic regulation. This course is complemented by the laboratory course 120:202 Foundations of Biology: Cell and Molecular Biology: Laboratory. **Both** 120:201 and 120:202 **must** be taken concurrently, although they are separate courses with their own grades.

Course Goal: Students will understand how the major principles of Cellular and Molecular Biology determine the functioning of genetic regulation.

PREREQUISITES: Concepts in Biology (BIOL 200 or R120 200), and General Chemistry (CHEM 121 or CHEM 125).

CO-REQUISITE: Foundations of Cellular and Molecular Laboratory (BIOL 202).

COURSE WEBSITE: [Canvas](#), login with your NJIT UCID. If you are a Rutgers student, you will need an NJIT UCID to get access to the site. If you do not already have one, you can request one at https://servicedesk.njit.edu/CherwellPortal/IST?_id=13d06385. **Everyone: please be sure that you have gone into your profile and changed your preferred e-mail to an account you check regularly.** You will automatically be assigned an NJIT e-mail address and this will be the default unless you change it.

CONVERGED CLASS INFORMATION: In order to enforce social distancing protocols necessary to ensure the safety of individuals attending in- person classes, BIOL 201 will run as a converged class in Spring 2021. Converged learning classes will meet at the scheduled time with some students physically in the classroom and others joining remotely. Because of social distancing restrictions, only a reduced number of students will meet physically at any one time.

REMOTE STUDENTS: Remote students will log on WebEx using the information given above, for their individual section. Remote students will participate in class by asking questions during the indicated times, either by unmuting their microphone or by writing the question in the chat box. Remote students will also participate in group work and will be assigned into Breakout sessions during the Lecture time, as appropriate.

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F2F STUDENTS: You have been invited to use the Back2Classroom app, through which you have been automatically assigned to your in-person class date. Students will participate online on the dates for which they are not assigned to attend in a face-to-face mode. To accommodate the changes in student schedules during the add-drop period, adjustments to the confirmed in person assignments will only be updated between Sept 1 - Sept 12. The next batch of confirmed in person assignments will be completed on Sept 13. No new automatic in person seat assignments will be scheduled after that date. Students who have a converged learning class will be sent a calendar invite, which must be opened. This will populate all the in person converged learning classes to which the student has been assigned into their google calendar.

Students enrolled in converged learning classes can choose to attend class remotely even when scheduled to attend physically. Students assigned a seat for a converged learning class will have the ability to manage their in-person seat assignments by canceling an in-person seat assignment and choosing to attend online. Cancelling a seat assignment will open a seat for another student to attend the class if they wish. Students who wish to attend a class session outside of their normal rotation will be able to use the app to request a booking; based on the availability of seats and the number of students requesting an in-person seat assignment (outside of the normal in-person rotation), the app will assign the seat based on priority request, and consistency of a student in attending the class when requesting a seat. A student's failure to show up to a class after requesting a special booking will reduce that student's future standing in the request queue. Students must make a determination on whether to cancel a class 48 hours before the class begins.

COURSE OBJECTIVES:

Students are able to:

Through selected readings, lectures, discussions and occasional group activities, students are encouraged to learn on their own about the main processes taking place in the cell from a molecular perspective. After successfully completing the course, students will have

1. the ability to describe the general structure of biomolecules as well as their role in cellular metabolism and the flow of genetic information;
2. information and concepts on bioenergetics and the use of energy by cells;
3. the information on the principles of membrane transport mechanisms and their role in important physiological processes at the organismal level;
4. acquired concepts and general principles on gene expression and its regulation;
5. knowledge on the concepts and general principles on eukaryotic signal transduction;
6. the skills to read, interpret and apply general information in the fields of cell and molecular biology;
7. evaluate contemporary hypotheses on the functional mechanisms of the cell;
8. reinterpret and/or postulate alternative hypotheses or ideas to explain or describe the phenomena studied in the course;
9. the opportunity to explore the topics covered in the course in higher level classes which require Foundations 201/202 as pre-requisites in the biology major and minor.

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REQUIRED MATERIALS:

- Alberts, Hopkin, Johnson, Morgan, Raff, Roberts, Walter **Essential Cell Biology, 5th Edition**, W.W. Norton & Company, NY. ISBN: 978-0393680362 <https://www.norton.com/books/9780393680362>

Some additional reading may be occasionally assigned from the following online resources (free text):
Pubmed eBook <https://www.ncbi.nlm.nih.gov/books/NBK21475/?term=Cell%20biology>

SUPPLEMENTAL MATERIALS:

- Any additional materials required for class would either be provided through Canvas (UCID required), handed out in class, or via web link.

GRADING POLICY & SCALE: Grades will be determined by performance on exams, quizzes, and class participation. Grades will be determined by the percentage of the possible points earned, following the standard grade scale below. Grades are not curved and do not ask for extra credit. Your grades will be posted to Canvas so you can keep track of your progress in the course.

Assignments	Percentage	Letter Grade	Percentage
Attendance and participation	5% (25 pts)	A	90 – 100
Lecture Exam 1 & 2	20% each (100 pts each)	B+	85 – 89
Project	10% (50 pts)	B	80 – 84
Homework & other assignments	10% (50 pts)	C+	75 – 79
Review Quizzes (3)	10% (50 pts)	C	65 – 74
Final Exam	25% (125 pts)	D	50 – 64
Total	100% (500 pts)	F	0 - 49

Extra Credit: There will be no individualized opportunities for extra credit. There may be opportunities for the entire class at the end of the semester.

Late Work: Work submitted late will be penalized with a 10% per day reduction.

ACADEMIC INTEGRITY: There is zero tolerance for academic dishonesty in this course which includes both cheating and plagiarism. The punishment for dishonesty in this course will be a zero on the assignment and a consultation with the Dean of Students after which further action may be required. Please ask me if you have any questions. The University's academic integrity policy can be found [here](#).

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REASONABLE ACCOMMODATION: If you have a special need that may require an accommodation or assistance, please inform me of that fact as soon as possible and no later than the end of the second-class meeting. Students with disabilities who require accommodations must contact Dr. Phyllis Bolling, Center for Counseling and Psychological Services (C-CAPS), Campbell Hall, (entry level), room 205, (973) 596-3420

ATTENDANCE: When attending class, your instructor will display a QR code. Students attending the in-person class will scan the code using their phones; this will update the seat assignment and provide affirmation that the student attended the class. If you expect to miss a class for a valid reason, please email Dr. Konsolaki and provide documentation (mary.konsolaki@njit.edu).

ALL EXAMS FOR THIS COURSE WILL BE ONLINE. PLEASE SEE MORE INFORMATION BELOW.

INFORMATION ON ONLINE EXAMS

NJIT policy requires that all midterm and final exams must be proctored, regardless of delivery mode, in order to increase academic integrity. Note that this does not apply to essay or authentic based assessments. In this course you will be required to use the Lockdown Browser with Monitor connected to WebEx proctoring method to ensure academic integrity for exams. Please see NJIT's response to questions about online proctoring here:

<https://www5.njit.edu/provost/response-questions-about-online-proctoring/>.

SEE BELOW FOR MORE INFORMATION ABOUT HOW EXAMS WILL BE PROCTORED IN THIS COURSE.

WebEx will be used to allow your instructor to proctor the exams. Your instructor will schedule a WebEx exam session and share the meeting information with you ahead of time. The exam will be in Canvas with Lockdown Browser and it will be password-protected. You can connect to the WebEx session with your phone. You can find links to download the mobile app from the App Store or Google Play Store at the bottom of [\[njit.webex.com\]](http://njit.webex.com) (<https://njit.webex.com/webappng/sites/njit/dashboard?siteurl=njit>). When your instructor is ready to start the exam, you will be provided with the exam password in the meeting so all students can begin the Canvas quiz. Your instructor will then watch you, via the web camera, as you take the exam. Students are expected to remain connected to the WebEx session until their exam is submitted. The session may also be recorded by your instructor. In order to use WebEx for proctored exams, you will need the following: * High-speed internet connection * Webcam (on a phone or tablet). The process for connecting to WebEx will be the same as when you connect for a class. Tips for ensuring a smooth experience while using WebEx: * Connect to your WebEx session before class starts. * Log into Canvas before connecting to WebEx. Questions or problems can be submitted via web form by going to: (<https://servicedesk.njit.edu>) (<https://servicedesk.njit.edu/>) and clicking on the "Report your issue online" link. You may also call the IST Service Desk with any questions at 973-596-2900.

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RESPONDUS LOCKDOWN BROWSER is a locked browser for taking assessments or quizzes in Canvas. It prevents students from printing, copying, going to another URL, or accessing other applications during a quiz. If a Canvas quiz/exam requires that LockDown Browser be used, students will not be able to take the assessment or quiz with a standard web browser.

Watch this [short video] (<http://www.respondus.com/products/lockdown-browser/student-movie.shtml>) to get a basic understanding of LockDown Browser. A student [Quick Start Guide (PDF)]

(<http://www.respondus.com/products/monitor/guides.shtml>) is also available. Respondus Lockdown Browser does not work with Linux and Chromebooks at this time. Please visit the [Respondus Knowledge Base article on computer requirements] (<https://support.respondus.com/support/index.php?/Knowledgebase/Article/View/89/25/what-are-the-computer-requirements-for-installations-of-respondus-lockdown-browser>) for additional information.

DOWNLOAD AND INSTALL LOCKDOWN BROWSER FROM THIS LINK:

[\[http://www.respondus.com/lockdown/download.php?id=264548414\]](http://www.respondus.com/lockdown/download.php?id=264548414)

[\[http://www.respondus.com/lockdown/download.php?id=264548414\]](http://www.respondus.com/lockdown/download.php?id=264548414) * []

[\[http://www.respondus.com/lockdown/download.php?id=264548414\]](http://www.respondus.com/lockdown/download.php?id=264548414)

Once your download and installation has finished, the Lock Down Browser will automatically launch (and close) as needed with the Quizzes. For this course, we will use the "New" quizzes format.

CODE OF STUDENT CONDUCT: Academic Integrity is the cornerstone of higher education and is central to the ideals of this course and the university. Cheating is strictly prohibited and devalues the degree that you are working on. As a member of the NJIT community, it is your responsibility to protect your educational investment by knowing and following the academic code of integrity policy that is found at:

<http://www5.njit.edu/policies/sites/policies/files/academic-integrity-code.pdf>.

Please note that it is my professional obligation and responsibility to report any academic misconduct to the Dean of Students Office. Any student found in violation of the code by cheating, plagiarizing, or using any online software inappropriately will result in disciplinary action. This may include a failing grade of F, and/or suspension or dismissal from the university. If you have any questions about the code of Academic Integrity, please contact the Dean of Students Office at dos@njit.edu.

COVID-19 SAFETY REQUIREMENTS: All persons physically present in any department facility or classroom shall comply fully with the NJIT COVID-19 safety policy at all times. Masks must be worn before entry to all department facilities, and social distancing guidelines must be followed. Individuals who are unable to wear a face mask due to medical reasons should contact the Office of Disability Services or Human Resources. Students who enter a classroom without wearing a mask properly, or remove their mask, will be cautioned by the instructor. The same is true for students who disregard the seating order or guidelines for social distancing. Students with obvious symptoms of respiratory illness should not come to campus and will be asked to leave. Students who do not comply with a request by a department instructor to adjust their behavior, in accordance with the University Policy, will be subject to disciplinary actions. Instructors have the right to expel the student or terminate the class session at which any student fails to comply with the University Policy.

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COURSE OUTLINE: *TENTATIVE SCHEDULE:* Dates listed by week; lectures will meet twice every week, unless otherwise noted. Homework assignments will be due on Saturday midnight, on Canvas, and review quiz assignments will be due on Sunday midnight. Please note that this is the proposed schedule and is subject to change. A more detailed schedule will be continually updated via the course Canvas site.

Week	Lecture Topic	Readings	Assignments Due
1/18	Unity of Life / Chemical bonds	Chapter 1	No HW
1/25	Small molecules / Macromolecules	Chapter 2	HW1 (Canvas)
2/1	Energy, catalysis / Biosynthesis	Chapter 3	HW2 (Canvas)
2/8	How proteins work / How are proteins regulated	Chapter 4	Review Quiz 1 (Canvas)
2/15	Exam 1 (see info below) / Structure of DNA/ Chromosomes	Chapter 5	HW3 (Canvas)
2/22	Regulation of chromosome structure/From DNA to RNA	Chapter 5 Chapter 7	HW4 (Canvas)
3/1	From RNA to protein/Control of gene expression I	Chapter 8	HW5 (Canvas)
3/8	Control of gene expression II / Post transcriptional regulation	Chapter 8	Review Quiz 2 (Canvas)
3/15	Spring Break		
3/22	Exploring gene function/ Project discussion	Chapter 10	HW6 (Canvas)
3/29	Exam 2 (see info below) / Membranes	Chapter 11	HW7 (Canvas) Project will be released
4/5	Membrane transport / Transporters / Intracellular Compartments/Protein transport	Chapter 12 Chapter 15	HW8 (Canvas)
4/12	Vesicular transport/Cell signaling	Chapter 16	HW9 (Canvas)
4/19	GPCRs/ Enzyme coupled receptors	Chapter 16	HW10 (Canvas)
4/26	Cytoskeleton	Chapter 17	Review Quiz 3 (Canvas) Project due
5/3	Exam 3 (Final) (see info below)		Final Exam Schedule: http://www5.njit.edu/registrar/exams/