

**JOHN JAY COLLEGE OF CRIMINAL JUSTICE
THE CITY UNIVERSITY OF NEW YORK
BIOLOGY 102: Spring 2013**

Adjunct Assistant Professor Brian Rafferty, Ph.D. – COURSE COORDINATOR

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Office Hours: Tuesdays/Thursdays 1:30-2:30pm or by appointment

Adjunct Assistant Professor Kathy Joubin, Ph.D.

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Office Hours: Thursdays 3-4pm and Fridays 1:30-2:30pm

Professor Diana Pettit, Ph.D.

Email: dpettit@jjay.cuny.edu Room: NB 05.66.18
Office Hours: Tuesdays/Thursday 12:10-1:30pm or by appointment

Section 01: Lecture: Tu/Th, 5 th Period (2:50p – 4:05p)	Prof. Rafferty	Room 08.67
<i>Lab: Fridays, 1st – 2nd Period (8:00a – 10:40a)</i>	<i>Prof. Pettit</i>	<i>Room 03.63</i>
Section 02: Lecture: Tu/Th, 6 th Period (4:15p – 5:30p)	Prof. Rafferty	Room 08.67
<i>Lab: Fridays, 3rd – 4th Period (10:50a – 1:30p)</i>	<i>Prof. Joubin</i>	<i>Room 03.63</i>
Section 03: Lecture: Tu/Th, 7 th Period (5:40p – 6:55p)	Prof. Rafferty	Room 01.119
<i>Lab: Fridays, 5th – 6th Period (2:50p – 5:30p)</i>	<i>Prof. Yang</i>	<i>Room 03.63</i>

Course Description: Biology 102 consists of lectures covering topics in modern biology including genetics, gene expression and regulation, and biotechnology. The laboratory portion of the course is designed to reinforce the concepts taught in the lecture and to teach basic laboratory skills. This course is designed for students with a science background and for Forensic Science majors. Biology 102 consists of lectures and laboratory experiments covering topics in modern biology. There are four (4) lecture exams and ALL will count, comprising 65% of the course grade. There is no dropped test in this course. The laboratory portion is worth 35% of the final grade.

Learning Goals of Bio102:

- Knowledge
 - Outline some of the basic concepts of biology
 - Explain the following basic concepts in the field of modern biology: genetics, and gene regulation
- Reasoning
 - Use knowledge of genetics to solve problems regarding inheritance
- Practical skills

- o Illustrate the following laboratory skills and experimental techniques: principles of scientific measurement, identification of macromolecules, genetic crosses, and forensic DNA analysis.
- o Establish proper positive and negative controls for basic biochemical experiments
- Communication
 - o Apply communication and analytical skills by writing a laboratory report and completing an oral presentation.

COURSE INFORMATION

Text/Study Guide Package: Campbell, N., Reece, J. et al (2010). Volume 1: *Biology* (9th ed.) New York: Pearson- Benjamin Cummings. (Available in the Bookstore) **Same binder used for Biol 101 lecture.**
ISBN 0321558146

Laboratory Manual: Available on BlackBoard (Biology 102 Spring 2013 Section 00)

Blackboard: Important course announcements, suggested homework assignments, review questions, a discussion forum for Q and A, and other resources will be posted to the course Blackboard. Check regularly. Furthermore, **students are responsible** for checking their **John Jay e-mail account** regularly for important announcements. Contact DoIT, **not** your Bio instructor, for help with e-mail or Blackboard.

Statement of the College Policy on Plagiarism: Plagiarism is the presentation of someone else's ideas, words, or artistic, scientific, or technical work as one's own creation. Using the ideas or work of another is permissible only when the original author is identified. Paraphrasing and summarizing, as well as direct quotations require citations to the original source. Plagiarism may be intentional or unintentional. Lack of dishonest intent does not necessarily absolve a student of responsibility for plagiarism. It is the student's responsibility to recognize the difference between statements that are common knowledge (which do not require documentation) and restatements of the ideas of others. Paraphrase, summary, and direct quotation are acceptable forms of restatement, as long as the source is cited. Students who are unsure how and when to provide documentation are advised to consult with their instructors. The Library has free guides designed to help students with problems of documentation. (JJC Undergraduate Bulletin, see Chapter IV Academic Standards). In this course, we will use www.turnitin.com for the lab reports and other assignments.

Accommodations for Students with Disabilities: Students with hearing, visual, or mobility impairments; learning disabilities and attention deficit disorders; chronic illnesses and psychological impairments may be entitled to special accommodation under the Americans with Disabilities Act (ADA). In order to receive accommodation, students must register with the **Office of Accessibility Services (O.A.S.)**, Room 1233-N, 212-237-8031, <http://www.jjay.cuny.edu/2023.php>) which will define, for both students and faculty, the appropriate accommodations. Faculty members are not allowed to work directly with students to attempt to accommodate disabilities and accommodations cannot be applied retroactively (after-the-fact).

Math and Science Resource Center: Tutoring is available free of charge for this course in the Mathematics & Science Resource Center (MSRC). The center also has a computer lab with internet access and a room for quiet study.

How do you get the most out of a tutoring session?

- i. *Start right away.* Students who begin tutoring from the beginning of the semester typically do better than those who wait.
- ii. *Book your appointments early.* During peak times, you may need to book at least a week in advance to get the times you want. To book your own appointments over the web, first read the instructions on the MSRC web site, then log on to TutorTrac at the URL below.
- iii. *Come prepared.* Please bring your class notes and textbook. Look over the reading and try the problems. If you can, bring a list of specific questions. The more you prepare, the more you will get out of the session.

- iv. If you miss a class, please get notes from a classmate *before* your session. Tutoring is not a substitute for attending class.
- v. If you are repeating the course (previous grade of "F" or "W"), you are eligible to participate in the Math Advancement Program (MAP) which provides weekly one-on-one tutoring with an experienced tutor. The deadline to sign up for the MAP program is Thursday, *January 31, 2013*. Please see Ms. Michele Doney in room 01.94 NB by *5:00 PM* on January 31, 2013 for details.

Contact Information for the MSRC, room 01.94 NB:

Phone: (646) 557-4635

Email: msrc@jjay.cuny.edu

MSRC Website: <http://www.jjay.cuny.edu/academics/592.php>

TutorTrac (for scheduling appointments): <https://jjctutortrac.jjay.cuny.edu>

CLASS POLICIES

Attendance: You are required to attend the lectures. Attendance will be taken either by the use of the classroom response clickers or a sign-in sheet. More than four (4) unexcused lecture absences are considered excessive and you will receive a grade of F. Attendance is also required for the laboratory sections and three (3) or more unexcused absences from lab will result in you receiving a zero (0) for your lab grade.

Homework and Class work Assignments: Throughout the semester, students will be assigned homework in the form of writing assignments, or internet-based assignments. On-line assignments will be given via the internet portal *Mastering Biology*. Class work assignments will be given in the form of quizzes or other assignments determined by the instructor. Class work and homework assignments are required; they are graded and contribute to the course grade, as described below.

*****Your Mastering Biology access code/account from Biology 101 will be able to be used and therefore you do not have to purchase another code. *****

Mastering Biology: There will be online homework assignments assigned for every chapter through Mastering Biology. These homework assignments will be graded and count! If you purchased your textbook through the bookstore, you already have paid access to Mastering Biology. If you got your textbook another way, please see the instructor about how to purchase access to Mastering Biology. No matter what, these homework assignments are a required part of the course.

Clickers: Clickers will be used in this course and are **required** for all students. Students may choose to purchase their own clicker, or rent clickers from us, at no cost. These clickers were purchased by a grant to the college from the U.S. Department of Education and remain the property of the college. Rented clickers must be returned at the end of the semester. If a student fails to return a rented clicker at the end of the semester, or earlier, if the student withdraws from the course, s/he will be charged the full cost of the clicker and will have a stop placed on their registration until they pay this replacement fee.

Clickers will be used for in-class polling and quizzing, which will be used to establish the attendance record for each session. Polls taken near the beginning and end of class will be used to determine if students arrive late or leave early, respectively, either of which will count as a half-absence (see attendance policy).

Exams: There are four in-class lecture exams, the last of which, although not cumulative, will occur during finals week at the scheduled time. All exams are of equal weight (13% of your overall grade) and all will count. There is **NO AUTOMATIC DROP TEST** in this class.

If you miss an exam (or foresee that you will miss an exam) for any reason, you **MUST** contact the instructor **as soon as humanly possible**. You may be allowed to take the exam late (or early). However, you are **ONLY** eligible for this one-time consideration if you contact the instructor immediately and you arrange to take the exam **BEFORE** the corrected exams are handed back to the class. In all other cases, the missed exam **WILL** count as a ZERO. (Exception: a documented medical or family crisis may result in being excused from an exam, but this is only allowed **ONCE**. Further missed exams will count as a zero, regardless of the reason.)

Grading: Your final grade for this class will be a combination of both lecture and lab grades. The lecture will make up 65% of your overall grade while the lab grade will make up the remaining 35%.

Lecture Grades: Grades are derived from exams, classwork assignments, and homework assignments.

- **EXAMS (80%):** Four (4) lecture exams will be given for the semester. There are no make-up exams. If you miss an exam and do not have a *valid written excuse*, you will receive a score of zero (0).
- **HOMEWORK (10%):** Writing or on-line assignments will be given in advance. Homework submitted must be typed and is due one week after the initial assignment date.
- **CLASSWORK (10%):** Throughout the semester various in-class assignments in the form of quizzes or assignments as determined by the instructor. Quizzes will be based on material previously covered.

Lab Grades: The breakdown of the lab grade will be discussed later on in the syllabus under lab grading.

Once these grades are totaled, the score will be expressed as a percentage and the final letter grade will follow the grading scale below. There will NOT be a CURVE!!!

Grading Scale: The grading scale here (→) is the official grading scale for this course. There will be no exceptions to this scale and grades will not be rounded up, except as explained here. Following all computations, the grade will be rounded to the nearest tenth of a point in Microsoft Excel (one decimal place, e.g., 97.2%). This is the final grade and no further manipulations will be made. The scale here (→) will then be strictly used. This means that a 72.9499% is a "C-" and a 72.9500% is a "C." These calculations are done by the computer, so there are no judgment calls or "leniency." You will get the grade you deserve. I will not accept requests to change the final grade once submitted (unless you have noticed a serious computational mistake)

93.0 and above	A
90.0 - 92.9	A-
87.0 - 89.9	B+
83.0 - 86.9	B
80.0 - 82.9	B-
77.0 - 79.9	C+
73.0 - 76.9	C
70.0 - 72.9	C-
67.0 - 69.9	D+
63.0 - 66.9	D
60.0 - 62.9	D-
below 60.0	F

Should you want to appeal your grade, **you must do so by going through the proper Grade Appeal procedure** which is explained at: <http://www.jjay.cuny.edu/academics/776.php>

CLASS PROTOCOL

All electronic devices, except for laptop computers or tablets (for note taking use only), must be turned off in class. Recording is not permitted except with the specific permission of the DSS office.

CUNY John Jay College expects students to maintain standards of personal integrity that are in harmony with the educational goals of the institution; to observe national, state, and local laws and University regulations; and to respect the rights, privileges, and property of other people. ANYONE disrupting the class will be removed.

- **Note on protocol to address the professor by email:**
 - It is inappropriate to send aggressive or rude emails to the professor. Reception of any such email from a student by the professor will result in points taken out of your final grade.
 - Emails to the professor must be addressed properly as "Hi/Hello/Dear, Dr.....;" with the subject of your email in the subject line.
 - Email addressed as "Hey" or any other greeting except those listed above and/or with no subject line will **NOT** be answered.

John Jay College: Biology 102 Spring 2012

Week	Date	DAY	LECTURE	PAGES
1	Jan 29	Tues	Chapter 12: THE CELL CYCLE	228-245
	Jan 31	Thurs	Chapter 12: Continued	
2	Feb 05	Tues	Chapter 13: MEIOSIS	246-261
	Feb 07	Thurs	Chapter 13: Continued	
3	Tuesday, February 12: College is closed (Lincoln's Birthday)			
	Feb 14	Thurs	Chapter 13: Continued	
4	Feb 19	Tues	Chapter 14: MENDEL AND THE GENE	262-285
	Feb 21	Thurs	Chapter 14: Continued	
5	Feb 26	Tues	Chapter 14: Continued	
	Feb 28	Thurs	EXAM #1: CHAPTERS 12-14	
6	Mar 05	Tues	Chapter 15: CHROMOSOME AND HEREDITY	286-304
	Mar 07	Thurs	Chapter 15: Continued	
7	Mar 12	Tues	Chapter 16: MOLECULAR BASIS OF HEREDITY	305-324
	Mar 14	Thurs	Chapter 16: Continued	
8	Mar 19	Tues	Chapter 16: Continued	
	Mar 21	Thurs	EXAM #2: CHAPTERS 15-16	
Monday, March 25th – Tuesday, April 2: Spring Recess, no classes!				
9	Apr 04	Thurs	Chapter 17: FROM GENE TO PROTEIN	325-350
10	Apr 09	Tues	Chapter 17: Continued	
	Apr 11	Thurs	Chapter 17: Continued	

**** Friday, April 12 – Last day to resign without academic penalty****

11	Apr 16	Tues	Chapter 18: REGULATION OF GENE EXPRESSION	351-380
	Apr 18	Thurs	Chapter 18: Continued	
12	Apr 23	Tues	Chapter 18: Continued	
	Apr 25	Thurs	EXAM #3: CHAPTERS 17-18	
13	Apr 30	Tues	Chapter 19: VIRUSES	381-395
	May 02	Thurs	Chapter 19: Continued	
14	May 07	Tues	Chapter 20: DNA TECHNOLOGY	396-425
	May 09	Thurs	Chapter 20: Continued	
15	May 14	Tues	Chapter 20: Continued	
	May 16	Thurs	Chapter 20: Continued	

FINALS WEEK EXAM #4: CHAPTERS 19-20

Section 01	Tuesday	May 21	12:30pm – 2:30pm	Same room as lecture
Section 02	Tuesday	May 21	4:00pm – 6:00pm	“
Section 03	Thursday	May 23	5:30pm – 7:30pm	“

Biology 102 Laboratory

Attendance and Lateness

You are required to attend the laboratory – it is considered a necessary hands-on learning experience. More than three (3) unexcused absences are considered excessive and you **will receive a zero** for the lab part of the course. Lateness (missing first roll call or a class quiz administered at the start of a lab) is considered one-half (1/2) an absence. Missing second roll call is considered a full absence. Any quiz that is missed due to absence or lateness cannot be made up and will count as a zero. You are responsible for providing acceptable written documentation for each excused absence or it will be considered unexcused.

Lab quizzes

A quiz will be administered at the start of most labs. You are responsible for being prepared by doing the assigned pre-lab reading. Quizzes will be based on lab questions (homework) assigned in the previous lab and the assigned reading for the day's lab.

Lab homework

A few homework questions or problems will be assigned at the end of most labs. You are responsible for preparing the answers to these questions, which will help to prepare you for both next week's lab quiz, but also the midterm and the final exams. These homeworks will be graded for completion only, but the instructor reserves the right to collect these homework assignments.

Lab report

A report on genetics of the fruit fly is due by the start of the Week 12 lab meeting. Reports will not be accepted after that date. Details will be provided at the appropriate time.

Lab notebook

A notebook is required. It will be checked weekly for progress and must be handed in for a grade on the day of the midterm and again the day of the final. In this notebook, there should be found answers to all assigned lab questions, homework, detailed description of all lab procedures, your lab results (as well as the expected or "correct" results), data interpretation, conclusions, notes, etc. Your instructor will give you the details of his/her preferred format, which must be followed to receive credit.

Other

Bring the proper lab book or handout material to each lab. **You must bring and wear protective eyewear to each lab.** You should wear a lab coat – permanent stains and holes in clothing are, unfortunately, common. No food, drink, etc. Place cell phones on silent, remove your headphones, and **do not use the outlets in the lab as charging stations for your electronic devices.**

Lab #	Dates	Topic Covered	Assigned Reading (Lab Book)
1	Feb 01	Course Description, policies, grading, and... The Scientific Process, Measurements, Notation	Lab# 0-1 handout
2	Feb 08	pH and Buffers	Lab#2 handout
3	Feb 15	Organic Molecules: Carbohydrates, Lipids, Proteins	Lab#3 handout
4	Feb 22	Osmosis and Diffusion	Lab#4 handout
5	Mar 1	Enzyme Kinetics	Lab#5 handout
6	Mar 8	Energetics, Fermentation, Respiration	Lab#6 handout
	Mar 15	<u>LAB MIDTERM EXAM (Labs 1-5)</u>	
7	Mar 22	Photosynthesis; discussion of lab reports	Lab#7 handout
** <u>Spring Recess: Monday, March 25 – Tuesday, April 2</u> **			
8	Apr 5	Mating of Fruit Flies and Mendel's Laws; practice problems	Lab#8 handout
9	Apr 12	Mitosis, Meiosis, Genetics Problems, Removal of Parent Flies	Lab#9 handout
10	Apr 19	Fruit fly experiment: Analyze Data; discussion of lab reports	Lab#10 handout
11	Apr 26	Presentations on Genetic Diseases	
12	May 03	Forensic DNA Analysis <u>(LAB REPORTS DUE at beginning of lab!!)</u>	Lab #12 handout
	May 10	<u>LAB FINAL EXAM (Labs 6-12)</u>	

Laboratory Grades: The laboratory section will comprise **35% of the course grade for Bio102**. In-class quizzes will cover material from the assigned reading. Thus, the assigned reading **MUST** be done before the laboratory. Lab Grades will be based on the following required components:

The lab grade is calculated as follows:

Midterm exam	30%	
Final exam	30%	
Laboratory report	10%	
Laboratory notebook	10%	
Lab Quizzes	<u>20%</u>	Lab quizzes are given at the beginning and/or end of class. Absent = zero
	100%	

Biology 102 Grade Breakdown

		<u>% Overall grade</u>	
Lecture Grade (65% of overall)	Exam #1 (20% of lecture grade)	13%	
	Exam #2	13%	
	Exam #3	13%	
	Exam #4	13%	
	Exams = 52% overall grade		
	Lecture Quiz Ave (10% of lecture grade)	6.5%	
Lecture HW Ave (10% of lecture grade)	6.5%		
Lab Grade (35% of overall)	Lab Midterm (30% of lab grade)	10.5%	
	Lab Final (30% of lab grade)	10.5%	
	Lab Quiz Ave (20% of lab grade)	7%	
	Lab Notebook (10% of lab grade)	3.5%	
	Lab Report (10% of lab grade)	3.5%	
		<hr/> 100%	

93.0 and above	A
90.0 - 92.9	A-
87.0 - 89.9	B+
83.0 - 86.9	B
80.0 - 82.9	B-
77.0 - 79.9	C+
73.0 - 76.9	C
70.0 - 72.9	C-
67.0 - 69.9	D+
63.0 - 66.9	D
60.0 - 62.9	D-
below 60.0	F

How to pass Biology 102

■ In-class

- Show-up, stay awake, LISTEN!!!
- Print out notes from Blackboard and fill them in during class
- Don't write ONLY what is on the lecture slides...listen carefully and jot down any point that I make that helps explain something.
- ASK QUESTIONS DURING CLASS SO YOU DON'T FORGET THEM

■ Homework

- Complete the assigned reading BEFORE class!
- Re-read your notes as soon as possible (that night if you can!)
- Complete the homework assignments as you go (Mastering Biology allows you to work on your assignments in bits and pieces)
- Make notecards (flash cards**) of everything in the notes
 - It is best NOT to wait until exam time to do this!
 - But even if you DO wait until the exam, still... make the flashcards!
- If you are struggling with a concept, come see me!!!

■ Exam Studying

- Read the notes yet AGAIN
- Study your flashcards. Drill them MANY times until you REALLY know them all.
- Rework your Mastering Biology HW assignments
- Prepare answers to ALL of the possible short answer exam questions.
- Study the figures from the book that I used in class.
- Take the "self-quizzes" at the end of each chapter. Go find the answers.
- Explore Mastering Biology study area and do all the activities.
- Only study in groups if you stay focused the whole time

**To make flash cards:

- Read through the notes
- Transfer notes to note cards, one concept at a time
- All exam material should be on the note cards
- Good Flash Cards: Definitions/Vocab, Lists, Flow of processes