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**Biology 104: Fall 2013**  
**JOHN JAY COLLEGE OF CRIMINAL JUSTICE**  
**THE CITY UNIVERSITY OF NEW YORK**

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Professor **Lisette Delgado-Cruzata, Ph.D., M.P.H.** (Lecture and Lab Instructor)  
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Office Hours: Monday and Wednesday, 12:30-2:00pm

Adjunct Professor **Anar Murphy, Ph.D.** (Recitation Instructor)  
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**Lecture: M/Wd, 10:50am-12:05pm, Instructor: Prof. Delgado-Cruzata, Room: NB L.76**

**Section 01**

**Lab: F, 8:00am-10:40am, Instructor: Prof. Delgado-Cruzata Room: 3.64**  
**Recitation: F, 10:50am-12:05pm, Instructor: Prof. Murphy Room: 1.67**

**Section 02**

**Recitation: F, 9:25am-10:40am, Instructor: Prof. Murphy Room: 8.72**  
**Lab: F, 10:50am-1:30pm, Instructor: Prof. Delgado-Cruzata Room: 3.64**

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**Course description:** Biology 104 is the second half of the modern biology sequence. It continues the in-depth exploration of the basic properties of living systems on the molecular, cellular, and organismal levels. In addition, evolution is introduced. Representative organisms from the plant and animal kingdoms are studied in detail. The laboratory portion of the course emphasizes phylogeny and teaches basic microscopy and dissection skills.

**Learning Goals of Bio104:**

1. **Knowledge:** Students will understand the basic concepts in the field of modern biology:
  - tissue structure and function
  - anatomy and physiology of the digestive, circulatory, respiratory, excretory, reproductive, nervous and motor systems, innate and acquired immune systems
  - evolution
  - plant anatomy and physiology
2. **Reasoning:** Students will use knowledge of evolution to solve problems regarding phylogeny and organismal development
3. **Practical Skills:** Students will learn laboratory skills and experimental techniques:
  - dissection techniques
  - phylogenetic classification

4. **Communication:** Students will apply communication and analytical skills by writing a laboratory report and completing an oral presentation.

### Text and Laboratory Manuals

#### Available in the Bookstore:

- Campbell, N. & Reece, J. (2008). *Biology* (8<sup>th</sup> ed.) New York: Pearson- Benjamin Cummings, ISBN-10: 0321560493. Volume 2: John Jay College Custom Edition

#### Online Resources:

[www.masteringbiology.com](http://www.masteringbiology.com), course id: MBDELGADOCRUZATA08509

Access codes are provided with the custom textbook, if bought in the John Jay Bookstore. Students that have purchased the text separately must purchase an access code through the Mastering Biology website. This website will have the homework assignments, these are required and will be graded.

#### Available on Blackboard:

- Laboratory Manual for Biology 104 at John Jay College.
- Readings for in-class discussion for Lecture and Recitation

***Students are responsible for accessing Blackboard frequently to complete assignments and find reading material***

**Blackboard:** Important course announcements, lecture notes, homework assignments, review questions, a discussion forum for Q and A, and other resources will be posted to the course on Blackboard. Please check regularly. Furthermore, **students are responsible** for checking their **John Jay e-mail account** regularly for important announcements. Contact [blackboardstudent@jjay.cuny.edu](mailto:blackboardstudent@jjay.cuny.edu) or DoIT (212.237.8200), **not** your Bio instructor, for help with e-mail or Blackboard.

**You must check Blackboard and your John Jay E-mail account regularly.**

You are responsible for any and all course information, assignments, announcements, and communication that occurs through blackboard and/or your email account.

### Grade Distribution and Class Policies

#### Grading Scale:

Lecture (55%):	
Exams	35%
In class discussion/presentations	10%
Attendance/participation	5%
Homework	5%

Recitation (15%)

Laboratory (30%)

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

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 72.949% is a “C-” and a 72.950% is a “C.” These calculations are done by the computer so there are no judgment calls or “leniency.”

**Lecture Attendance:** You are required to attend the lectures. An attendance sheet will be circulated during class. It is your responsibility to sign the sheet *during* class. You will be allowed three absences with no required documentation. However, beginning with the fourth undocumented absence, your final course grade will be penalized by two points (2%) for each undocumented absence. Arrivals later than five minutes after the start of class will count as a one-half absence. Attendance is also required for recitation and lab.

**Lecture Exams:** There are four in-class lecture exams, and a cumulative final exam. All exams are of equal weight, including the final. 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 will only be allowed **ONCE**. Further missed exams will count as a zero, regardless of reason.)

**Class Protocol:** All electronic devices, except for laptop computers, 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.

Disruptive behavior will result in **5 points** being taken from **your final grade**.

**Accommodations for Students with Disabilities:** Qualified students with disabilities will be provided reasonable academic accommodations if determined eligible by the Office of Accessibility Services (OAS). Prior to granting disability accommodations in this course, the instructor must receive written verification of a student's eligibility from the OAS which is located at L66 in the new building (**212-237-8031**). It is the student's responsibility to initiate contact with the office and to follow the established procedures for having the accommodation notice sent to the instructor.

**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](http://www.turnitin.com) for the lab reports and other assignments.

### **Group work:**

Students will work with classmates in groups of up to four students created in the first class. If a student is absent, he or she should approach the instructor as soon as possible to be assigned to a group. The group assignments include: in-class presentations, discussions and a paper. The assignments will be graded as a group and all members of the group will receive the same grade. Students will outline the rules for the functioning of their own group, will type them and hand them in to the professor at the beginning of the second lecture meet (Mon Sept. 9<sup>th</sup>). Find below some aspects to consider in creating the rules for your group; however, add others that you find appropriate:

- Best method to communicate

- Designate a point person
- Group deadline for assignments (for instance, if an assignment is due on Mon in class, the group deadline could be Fri for editing and reviewing)

<b><u>Lecture Schedule</u></b>
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<b>Date</b>	<b>DAY</b>	<b>LECTURE</b>	<b>PAGES</b>
Aug 28	Wed	Course Introduction: Description of assignments, policies and grading	
Sep 02	Mon	College is closed	
Sep 04	Wed	College is closed	
Sep 09	Mon	CHAPTER 22: Descent with Modification	452-467
Sep 11	Wed	CHAPTER 23: Evolution of Populations	468-485
Sep 16	Mon	CHAPTER 24: The Origin of Species	487-506
Sep 18	Wed	CHAPTER 25: History of Life on Earth	507-533
<b>Sep 23</b>	<b>Mon</b>	<b>EXAM #1: Chapters 22-25</b>	
Sep 25	Wed	CHAPTERS 27: Bacteria and Archaea	556-574
Sep 30	Mon	CHAPTERS 28: Protists	576-599
Oct 02	Wed	CHAPTERS 29: Plant Diversity I	600-617
Oct 07	Mon	CHAPTER 30: Plant Diversity II	618-636
Oct 09	Wed	CHAPTER 35: Plant Form and Function	738-754
Oct 14	Mon	College is closed	
Oct 15	Tue	Cont. Plant Chapters	
Oct 16	Wed	CHAPTER 31: Fungi	637-653
<b>Oct 21</b>	<b>Mon</b>	<b>EXAM #2: Chapters 27-30, 35</b>	
Oct 23	Wed	CHAPTER 40: Animal Form and Function	852-874
Oct 28	Mon	CHAPTER 41: Animal Nutrition and Digestion	875-897
Oct 30	Wed	CHAPTER 42: Circulation and Gas Exchange	898-929
Nov 04	Mon	CHAPTER 43: The Immune System	930-953
Nov 06	Wed	Cont. Animal chapters Part I	
<b>Nov 11</b>	<b>Mon</b>	<b>EXAM #3: Chapters 31, 40-43</b>	
Nov 13	Wed	CHAPTER 44: Osmoregulation and Excretion	954-975
Nov 18	Mon	CHAPTER 45: Hormones and the Endocrine System	976-99
Nov 20	Wed	CHAPTER 46: Animal Reproduction	998-1020
Nov 25	Mon	CHAPTER 48 & 49: Neurons and Synapses/ Nervous System	1047-1063 1064-1078
Nov 27	Wed	No class	
<b>Dec 02</b>	<b>Mon</b>	<b>EXAM #3: Chapters 44-46, 48,49</b>	
Dec 04	Wed	CHAPTERS 53: Population Ecology	1174-1197
Dec 09	Mon	CHAPTER 54: Community Ecology	1198-1221
Dec 11	Wed	Review	
<b>Dec 18</b>	<b>Wed</b>	<b>Final Exam ALL CHAPTERS</b>	

## **Bio104 Recitation**

**Recitation Attendance and Participation** is mandatory. Following one “freebie,” for every missed recitation class, a deduction of five (5) percentage points will be taken off of the final recitation grade. Absences may be excused only with valid written documentation. Because class will **NEVER** let out early, students are expected to come to recitation sections with questions about the selected topic or lecture material. Following one warning, any student that does not actively participate in the in-class activities will be charged an absence.

**Recitation Grades:** The recitation section comprises 15% of the BIO104 course grade and is based on in-class assignments, attendance and participation, and a final group paper.

Attendance and participation	5%
Final paper	5%
Presentation and in-class discussion	10%

**Assignments:** Every week, students will be assigned readings through Blackboard. Students are responsible for reading posted articles and each week one or two groups will be assigned to prepare a short Power Point presentation based on the readings. The presentation will be of one article, it is expected to be no more than 10 min long and will be assigned at least two weeks in advance. Everyone in the class is expected to prepare for the discussions and ask questions to the presenters.

At the end of the semester, each group will hand in a short paper. Instructions for the paper will be provided in a separate hand-out by the fourth week of class (Oct 4<sup>th</sup>).

<b><u>Recitation Schedule</u></b>
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<b><u>Date</u></b>	<b><u>TOPIC</u></b>
Aug 30	Description of class assignments and policies Introduction to the Theory of Evolution
Sep 20	Hardy-Weinberg equilibrium and allele frequency The Origin of Species
Sep 27	Microbiology – bacteria, protists, archaea
Oct 04	Plant Diversity
Oct 11	Plant Structure and Anatomy
Oct 18	Fungi
Oct 25	Animal Anatomy
Nov 01	Animal Nutrition and Digestion
Nov 08	Circulation and Gas Exchange
Nov 15	Immunology
Nov 27	Osmoregulation and Excretion/ Endocrine System
Nov 29	Animal Reproduction
Dec 06	Nervous System
Dec 13	Ecology

## **BIO104 Laboratory Policies**

### **Laboratory Manual and Course Materials**

**Laboratory Manual:** The manual is posted on Blackboard and students are responsible for printing each lab in advance and bring it with them. Reading the material in advance is mandatory and will be tested in a short quiz at the beginning of each lab.

**Lab notebook:** Everyone must use a three-ring binder with dividers for every week. No exceptions.

In the binder every lab should have the following: assigned questions and exercises, detailed description of lab procedures, your lab results (as well as expected or “correct” results), data interpretation, conclusions, and any additional notes. The binders will be checked weekly for progress and must be handed in for a grade on the day of the midterm and final exams. For labs 8-11, students should include all detailed notes regarding the dissections and the physiology that is associated with dissections, as given by the lab instructor.

You must bring protective eyewear to each lab, and it is available for purchase at the bookstore. You should wear a lab coat or sensible clothing relevant for lab work. No food and drinks are permitted in the lab. The use of cell phones, iPods, mp3 players may not be allowed at any time.

### **Lab Participation and Attendance**

**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 missed due to unexcused 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 lateness or it will not be excused.

**Participation:** Many lab activities are hands-on and you are expected to actively participate even when part of a group – otherwise, you will not get full credit for attendance.

### **Grade distribution**

**Lab quizzes and exams:** A quiz will be administered at the start of ALL labs, starting with Lab#4 on Oct. 4<sup>th</sup>. You are responsible for being prepared by doing the assigned pre-lab reading. Quizzes will be based on the assigned reading for the day’s lab. There will be a mid-term and final exam.

**Lab homework:** Homework problems will be assigned at the end of most labs, which will help you prepare for both next week’s lab quiz and the midterm and final exams. These will be checked and graded for completion when you turn in your lab notebook at the midterm and final exams. However, the instructor also reserves the right to collect and grade these homework assignments if s/he so chooses.

**Laboratory Grades:** The laboratory section will comprise 30% of the course grade for BIO104. 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:

25%	In-class quizzes
15%	Lab Notebook **
30%	Midterm lab exam
30%	Final lab exam

\*\* (Notebook for Lab#1-6 due at the midterm exam, Lab#7, #12 and dissection notes due at final exam) \*\*

## Laboratory Schedule

<b>Date</b>	<b>Lab#: Topic Covered</b>
Aug 30	Lab#1: Course Description, policies and grading. Introduction to Cladistics
Sep 20	Lab#2: Field Trip to the American Museum of Natural History with assignment Students will go to the AMNH as part of their homework and complete the assignment. Class will not meet on this day; students will use that time to complete the assignment with other members of their group. Instructions will be provided on Aug. 30 <sup>th</sup> .
Sep 27	Lab#3: Molecular Phylogenetics
Oct 04	Lab#4: Introduction to the microscope Microbiology: Eubacteria and Protista
Oct 11	Lab#5: Algae, Volvocine Series, Fungi
Oct 18	Lab#6: Plant evolution
Oct 25	<b>LAB MIDTERM EXAM (Labs #1-6)</b>
Nov 01	Lab#7: Plant development and Angiosperm forms
Nov 08	Lab#8: Dissection of the Pig
Nov 15	Lab#9: Dissection of the Pig
Nov 27	Lab#10: Dissection of the Pig
Nov 29	Lab#11: Dissection of the Pig
Dec 06	Lab#12: Animal Development
Dec 13	<b>LAB FINAL EXAM (Labs #7-14)</b>