

Biology 104: Fall 2012

Course Coordinator and Lecture Instructor:

Professor **Jason M. Rauceo, Ph.D.**

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Course Instructors:

Adjunct Professor **Ronald Pilette, Ph.D.** (Laboratory Instructor, Sec. 01, 02)

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Adjunct Instructor **Stephanie Rodriguez, B.A.** (Laboratory Instructor, Sec. 03)

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Adjunct Instructor **Leonid Sukala, B.S** (Recitation Instructor, Sec. 01, 02, 03)

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Lecture: 3rd Period, 10:50a – 12:05p M/W, Room: L.76

Section 01: Lab – 3rd & 4th Period, 10:50a – 1:30p, Fr, rm 03.64. Recitation – 2nd Period, 9:25a – 10:40a, Mon, rm NB/1.108

Section 02: Lab – 5th & 6th Period, 2:50p – 5:30p, Fr, rm 03.64. Recitation – 2nd Period, 9:25a – 10:40a, Wed, rm T/235

Section 03: Lab – 1st & 2nd Period, 8:00a – 10:40a, Mon, rm 03.64. Recitation – 1st Period, 8:00a – 9:15a, Wed, rm NB/3.80

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* (8th ed.) New York: Pearson- Benjamin Cummings, ISBN-10: 0321560493. Volume 2: John Jay College Custom Edition
- Smith, D. G. and M. P. Schenk (2003-2nd ed.) *A Dissection Guide and Atlas to the Fetal Pig*. Morton Pub. Co.

Available on Blackboard:

- Laboratory Manual for Biology 104 at John Jay College.

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 for the lab reports and assignments. other

Grading Scale: The grade for the Bio104 course is a composite of lecture (60%), laboratory (30%), and recitation (10%). 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."

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

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 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.

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, the last of which, although not cumulative, will occur during finals week at the scheduled time. All exams are of equal weight (15% of the course grade each) 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 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**.

Lecture Schedule

Date	DAY	LECTURE	PAGES
Aug 27	Mon	CHAPTER 20: Biotechnology	396-425
Aug 29	Wed	CHAPTER 20: Biotechnology (cont)	396-425
Sep 03	Mon	Labor Day Holiday, no classes	
Sep 05	Wed	CHAPTER 21: Genomics	426-447
Sep 10	Mon	CHAPTER 22: Descent with Modification	452-467
Sep 12	Wed	CHAPTER 23: Evolution of Populations	468-485
Sep 17	Mon	No classes	
Sep 19	Wed	CHAPTER 24: The Origin of Species	487-506
Sep 24	Mon	EXAM #1: Chapters 20-24	
Sep 26	Wed	No classes	
Oct 01	Mon	CHAPTER 25: History of Life on Earth	507-533
Oct 03	Wed	CHAPTERS 27 & 28: Bacteria, Archaea, & Protists	556-574, 28.1,5,7
Oct 08	Mon	Columbus Day Holiday, no classes	
Oct 10	Wed	CHAPTERS 27 & 28: Continued	556-574, 28.1,5,7
<u>Note Wed, Oct. 10, Classes follow Mon schedule!</u>			
Oct 15	Mon	CHAPTER 29: Plant Diversity I	600-617
Oct 17	Wed	CHAPTER 30: Plant Diversity II	618-636
Oct 22	Mon	CHAPTER 35: Plant Form and Function	738-754
Oct 24	Wed	CHAPTER 31: Fungi	637-653

Oct 29	Mon	EXAM #2: Chapters 25,27-31, 35	
Oct 31	Wed	CHAPTER 40: Animal Form and Function	852-874
Nov 05	Mon	CHAPTER 41: Animal Nutrition and Digestion	875-897
Nov 07	Wed	CHAPTER 42: Circulation and Gas Exchange	898-929

Friday, November 9 – LAST DAY TO RESIGN WITHOUT ACADEMIC PENALTY**

Nov 12	Mon	CHAPTER 42: Continued	898-929
Nov 14	Wed	CHAPTER 43: The Immune System	930-953
Nov 19	Mon	CHAPTER 43: Continued	930-953
Nov 21	Wed	CHAPTER 44: Osmoregulation and Excretion	954-975

Nov 26 Mon EXAM #3: Chapters 40-44

Nov 28	Wed	CHAPTER 45: Hormones and the Endocrine System	976-997
Dec 03	Mon	CHAPTER 46: Animal Reproduction	998-1020
Dec 05	Wed	CHAPTER 48: The Nervous System	1047-1063
Dec 10	Mon	CHAPTERS 48 & 49: Nervous Systems	1047-1063
Dec 12	Wed	CHAPTER 49.1-3 Nervous Systems (cont)	1064-1078

Dec 17 Mon Final Exam 10:15a – 12:15p CHAPTERS 45-49

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 10% of the Bio104 course grade and is based on homework, in-class assignments, attendance and participation, and possibly quizzes. Every week, students will be assigned homework through the internet portal *Mastering Biology*. 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. The homework assignments are required and will be graded. Although the instructor reserves the right to substitute in-class quizzes for homework assignments at any time, the homework grade will form the grade for recitation, but will be affected by attendance as described above.

Recitation Schedule

Date	Topic Covered	Text book Pages
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Section:

01 02/03

Aug 27	Aug29	Course Description, policies, grading, and... Biotechnology/Genomics	ch20
Sep 10	Sep05	Biotechnology/Genomics (cont)	ch20
Sep 24	Sep12	Hardy-Weinberg equilibrium and allele frequency &	
Sep 24	Sep19	The Origin of Species	ch23-24

September 24, Monday: Lecture Exam #1

Oct 01	Oct 03	History of Life on Earth	ch25
Oct 10	Oct 17	Microbiology – bacteria, protists, archaea	ch27, 28

Oct 15	Oct 24	Plant Structure and Anatomy	ch30, 35
Oct 22	Oct 24	Fungi	ch31

October 29, Monday: Lecture Exam #2

Oct 29	Oct 31	Animal Nutrition and Digestion	ch41
Nov 05	Nov 07	Circulation and Gas Exchange	ch42

Friday, November 09 – LAST DAY TO RESIGN WITHOUT ACADEMIC PENALTY**

Nov 12	Nov 14	Immunology	ch43
Nov 19	Nov 21	Osmoregulation and Excretion	ch44

November 26, Monday: Lecture Exam #3

Nov 26	Nov 29	The Endocrine System	ch46
Dec 03	Dec 05	Neurons: membrane voltage and action potentials	ch48
Dec 10	Dec 12	Nervous Systems	ch49

Biology 104 Lab Policies

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.

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 problems will be assigned at the end of most labs. You are responsible for preparing the answers to these questions, 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.

Lab notebook

A notebook is required for labs #1 to #7 and #12. It will be checked weekly for progress and must be handed in for a grade on the day of the midterm and final exams. 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 expected or "correct" results), data interpretation, conclusions, notes, etc.

Your instructor will give the details of his/her preferred format, which must be followed to receive credit. One absolute requirement is that **all** the material for a given lab must be kept together. Everyone must use a three-ring binder with dividers for every week. No exceptions. 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.

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.

Other

Bring the proper lab book material to each lab. **You must bring protective eyewear to each lab.** You should wear a lab coat and sensible clothing relevant for lab work. No food, drinks, etc. Cell phones, iPods, mp3 players, etc. may not be used at any time.

Laboratory Schedule

<u>Date</u>	<u>Lab#: Topic Covered</u>
Sec 01/02 Sec 03	
Aug 31 Aug 27	Lab#1: Course Description, policies, grading, and... Handout Introduction to Cladistics
Sep 07 Sep 10	Lab#2: Field Trip to the American Museum of Natural History Handout
Sep 14 Sep 24	Lab#3: Molecular Phylogenetics Handout
Sep 21 Oct 1	Lab#4: Introduction to the microscope and... Handout Microbiology: Eubacteria and Protista
Sep 28 Oct 08	Lab#5: Algae, Volvocine Series, Fungi Handout
Oct 05 Oct 17	Lab#6: Plant evolution Handout
Oct 12 Oct 22	LAB MIDTERM EXAM (Labs #1-6)
Oct 19 Oct 29	Lab#7: Plant development and Angiosperm forms
Oct 26 Nov 05	Lab#8: Dissection of the Pig Dissection Guide
Nov 02 Nov 12	Lab#9: Dissection of the Pig Dissection Guide
Nov 09 Nov 19	Lab#10: Dissection of the Pig Dissection Guide
Nov 16 Nov 26	Lab#11: Dissection of the Pig Dissection Guide
Nov 30 Dec 03	Lab#12: Animal Development Handout
Dec 07 Dec 10	LAB FINAL EXAM (Labs #7-14)

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) ***