

JOHN JAY COLLEGE OF CRIMINAL JUSTICE
THE CITY UNIVERSITY OF NEW YORK

BIO 315 – GENETICS: SPRING 2013

Instructor: Dr. Jason Rauceo Ph.D

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Office hours: Mondays, 11am - noon or by appointment

Meeting Time: Mondays & Wednesdays, 9:25am - 10:40am, Room. NB 1.127

Text: Russell, P.J., (2010). *Genetics A Molecular Approach* (3rded.). San Francisco, CA: Pearson Benjamin Cummings. ISBN number. 9780321569769

Course Description: This course is focused on the fundamental principles of Genetics. Topics include classical Mendellian genetics, microbial genetics, gene regulation, biotechnology, and genomics. Special topics will explore ethical issues and the relevance of genetics to clinical medicine (recombinant DNA therapy, cloning). English 102 and BIO 103-104 are the course prerequisites.

Knowledge and Performance Objectives: Students will learn the basic concepts and techniques in the field of modern genetics:

- Genome Structure and Organization
- Gene Regulation and Function
- Cellular and Molecular Mechanisms of Inheritance
- Microbial Genetics
- Genetic Engineering Techniques

Grading: Grades are derived from exams, in-class quizzes, homework essay writing assignments, class group discussions/oral presentations, and attendance.

- **EXAMS (60 Points):** Three (3) lecture exams, each worth 20 points for a total of 60 points of the final class grade will be given. 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 (15 points):** Writing assignments will be given in advance and consist of short essays (2-3 pages each) based on current relevant literature (i.e. journal and newspaper articles). Homework submitted must be typed and is due one week after the initial assignment date.
- **ORAL PRESENTATIONS (10 points):** An oral presentation is required. The presentation will be based on class assignments (**problem solving workshop**). Problems and presentation criteria will be given in advance. Presentations are limited to approximately 6 – 8 minutes.

- **QUIZZES (10 Points):** Throughout the semester several in-class quizzes will be given at the beginning of class. Quizzes will be based on material previously covered or scheduled to be covered on the day of the quiz.
- **ATTENDANCE AND PARTICIPATION (5 Points):** You are required to attend and participate in class discussion groups. An attendance sheet will be circulated during class. It is your responsibility to sign the sheet *during* class. You will not be permitted to sign the attendance sheet after the class has been dismissed. More than four (4) unexcused absences are considered excessive and you will receive a grade of “F”.

Blackboard: It is your responsibility to check Blackboard for information regarding the course. The syllabus, lecture notes (Course Documents section in Blackboard), and other pertinent material will be posted on Blackboard.

Resources: Students have access to the computers in the Science/Mathematics Learning Center (Rm. 4300 N), Academic Computing and the Library. The library resources for this course are extensive and include general periodicals such as CQ Researcher, EBSCOhost Academic Search Premier, EBSCOHost Master FILE Premier, and science/forensic science holdings such as General Science Abstracts, InfoTrac Health Reference Center Academic, Science Direct, ACS Journals, PubMed, and the Forensic Bibliographic Database.

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 documentations) 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.

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., 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).

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. 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 can have up to 5 points deducted from their final grade and will be removed.

Grading Scale: The grade for the Bio315 course is based entirely on the class lecture. 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.”

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

Class Schedule:

LECTURE	DATE		TOPICS	TEXT ASSIGNMENTS
1	Jan 28	Mon	Introduction, DNA: The Genetic Material, (Quiz 1)	Ch.1-2, p. 1-32
2	Jan 30	Wed	DNA: The Genetic Material, (Quiz 2)	Ch.2 p.9-32
3	Feb 04	Mon	DNA Replication (Quiz 3)	Ch.3 p. 36-59
4	Feb 06	Wed	DNA Replication (cont)	Ch.3 p. 36-59
5	Feb 11	Mon	Gene Function (Quiz 4)	Ch.4 p. 60-80
6	Feb 13	Wed	Gene Expression: Transcription (Quiz 5)	Ch.5 p.81-101
	Feb 18	Mon	No Class (President’s Day)	
7	Feb 20	Wed	Gene Expression: Translation	Ch.6 p.103-129
8	Feb 25	Mon	Problem Solving Workshop #1	1-6
9	Feb 27	Wed	Exam 1	Chps. 1-6
10	Mar 04	Mon	DNA Mutation, DNA Repair, & Transposable Elements (1)	Ch.7 p.130-170
11	Mar 06	Wed	DNA Mutation, DNA Repair, & Transposable Elements (2)	Ch.7 p.130-170
12	Mar 11	Mon	DNA Mutation, DNA Repair, & Transposable Elements (3)	Ch.7 p.130-170

13	Mar 13	Wed	Microbial Genetics	Ch.15 p.429-462
14	Mar 18	Mon	Regulation of Gene Expression	Ch.17 p.491-517
15	Mar 20	Wed	Regulation of Gene Expression	Ch.18 p.518-546
Mar 25 – Apr 02: Spring Recess. NO CLASS!!!				
16	Apr 03	Wed	Regulation of Gene Expression (Quiz 6)	Ch.18 p.518-546
17	Apr 08	Mon	Problem Solving Workshop #2	Chps. 7, 15, 17,18
18	Apr 10	Wed	Exam 2	Chps. 7, 15, 17,18
19	Apr 15	Mon	Genomics (1)	Ch.8 p.170-216
<u>Friday, April 12- Last day to resign Without Academic Penalty</u>				
20	Apr 17	Wed	Genomics (2) (Quiz 7)	Ch.8 p.170-216
21	Apr 22	Mon	Functional and Comparative Genomics	Ch.9 p.217-247
22	Apr 24	Wed	Recombinant DNA Technology (1)	Ch.10 p.249-296
23	Apr 29	Mon	Recombinant DNA Technology (2) (Quiz 8)	Ch.10 p.249-296
24	May 01	Wed	Problem Solving Workshop #3	Chps. 8-10
25	May 06	Mon	Mendelian Genetics (Quiz 9)	Ch.11 p.297-325
26	May 08	Wed	Chromosomal Basis of Inheritance	Ch.12 p.326-355
27	May 13	Mon	Extensions and Deviations of Medelian Genetics (Quiz 10)	Ch.13 p.363-393
28	May 15	Wed	Problem Solving Workshop # 4	Chps. 11-13
	May 22	Wed	Final Exam (10:15am-12:15pm)	Chps. 8-13