

Fall 2018

BIOL 352-001: Genetics

Mary Konsolaki

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BIOLOGY 352-001: GENETICS

INSTRUCTOR:	Dr. Mary Konsolaki	PHONE:	973-642-4975
OFFICE:	340D Central King Building	EMAIL:	mary.konsolaki@njit.edu
OFFICE HOURS:	W: 12:00pm – 2:00pm	COURSE WEBSITE:	http://moodle.njit.edu/
COURSE SCHEDULE:	T,R: 4:00PM– 5:20PM, CKB 204, CKB G08		

COURSE DESCRIPTION: This course surveys the basic concepts of Genetics. We plan to start the course with a detailed examination of classical genetics experiments beginning with those of Mendel, followed by a study of DNA structure and manipulation. Further lectures in the course will focus on some of the details of molecular genetics, developmental genetics, and population genetics.

LEARNING OBJECTIVES: Upon successful completion of this course, students will have:

- (1) knowledge of terms, concepts and theories of Genetics.
- (2) the ability to integrate the material from multiple sources and research.
- (3) improved critical thinking skills and the opportunity to apply genetic concepts in everyday biology-related applications.

PREREQUISITES: Foundations of Biology: Cell & Molecular Biology Lecture & Lab. (R120:201/202), Foundations of Biology: Ecology and Evolution (BIOL 205/206) with a grade of C or better.

REQUIRED MATERIALS:

- **Genetics Essentials**, Fourth Edition (2018) Benjamin A. Pierce. Students can purchase a 6-month subscription to the E-book, ISBN: 9781319189051 (most affordable option).

Some additional reading may be occasionally assigned from the following online resources (free text):

1. Scitable by Nature education: <http://www.nature.com/scitable/topic/genetics-5>
2. Pubmed eBook: <http://www.ncbi.nlm.nih.gov/books/NBK21766/?term=Genetics>

Supplemental Materials: iClicker (please bring to every class), 3x5 notecards (in-class assignments will be handed in most classes. They must be 3x5 to stack correctly, no paper ripping). A couple different colors of pen or pencil are sometimes helpful in diagramming genetics problems.

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COURSE WEB PAGE: We will use [Moodle](#) for coursework submission, for announcements, and for various activities. To use Moodle students must have an NJIT UCID. If you are matriculated at NJIT you should already have a UCID. If you are a Rutgers student you may already have one. You can check by following the directions here: <https://ist.njit.edu/ucid/>. If you do not have one you can request one here: <https://newacct.njit.edu/~accts/cgi-bin/new> or call the NJIT helpdesk for assistance (973- 596- 2900).

GRADING:

Tentative grading scale: While adjustments will be made before the final grade is issued, the initial grading scale to be used in determining your final grade is:

Assignments	Percentage
Attendance & Participation	5%
Homework	10%
Quizzes	15%
Exam 1	20%
Exam 2	25%
Exam 3	25%
Total	100%

Letter Grade	Percentage
A	90 – 100
B+	85 – 89
B	80 – 84
C+	75 – 79
C	65 – 74
D	50 - 64
F	0 - 49

BIOLOGY 352 COURSE POLICIES:

⊗ **Attendance and Participation:** Students are expected to attend all meetings of the course. Clicker questions, 3x5 notecards and sometimes quizzes will be used as a measure of attendance. If you expect to miss a class for a valid reason, please email Dr. Konsolaki and provide documentation (mary.konsolaki@njit.edu).

⊗ **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

☐ **Academic Integrity:** Be aware of the rules set forth in the [University Code on Academic Integrity](#). In brief, the instructor will not allow cheating or plagiarism.

☐ **Cellular Phones:** All cellular phones and beepers must be switched off during all class times.

☐ **Extra Credit:** There will be no individualized opportunities for extra credit. There may be opportunities for the entire class during the course.

Schedule: Dates listed by week; lectures will meet twice every week, unless otherwise noted. Homework assignments will be due on Thursdays before class, on Moodle. Please note that this is the proposed schedule and is subject to change. A more detailed schedule will be continually updated via the course Moodle site.

WEEK OF	LECTURE TOPIC	SELECTED ASSIGNMENTS
9/3	Introduction to Genetics/ Chromosomes	Pretest
9/10	Basic principles of heredity/ Sex-linked traits	HW1 (Moodle)
9/17	Extensions & modifications of basic principles	HW 2 (Moodle)
9/24	Human genetics/ Chromosome variations	Quiz 1 on Moodle
10/1	Linkage & recombination/ Mapping of human genes	HW 3 (Moodle)
10/8	Exam 1 Chemical nature of DNA	HW 4 (Moodle)
10/15	Chromosome structure/ DNA replication	HW 5 (Moodle)
10/22	Transcription/Central Dogma/Viruses	HW 6 (Moodle)
10/29	Translation/Epigenetics/Cancer	Quiz 2 on Moodle
11/5	Exam 2 Molecular Techniques	HW 7 (Moodle)
11/12	Bacterial & Eukaryotic gene regulation	HW 8 (Moodle)
11/19	RNA regulation Thurs. - No Lecture (Thanksgiving)	HW 9 (Moodle)
11/26	Mutations/ Transposable elements	HW 10 (Moodle)
12/3	Quantitative/Populations/ Developmental genetics	Quiz 3 on Moodle
12/10	The-omics era/Review Thu – No Lecture	No HW
12/15-21	http://www5.njit.edu/registrar/exams/	
FINALS: TBD	FINAL EXAM WEEK: DECEMBER 15-21, 2018	