

BIOLOGY 320: DISCOVERING BIOLOGICAL RESEARCH

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OFFICE HOURS:	T: 11:00am -12:00pm [Flammang]	COURSE SCHEDULE:	M: 2:30PM – 3:55PM [FMH 319]

COURSE DESCRIPTION:

Success in the constantly evolving field of biology necessitates staying current in scientific literature. This requires competency in skills such as analysis of primary sources, synthesis of information from multiple sources, and oral and written communication skills. This course focuses on these competencies. Students will develop skills need to read and analyze scientific literature, and to communicate science. Each semester the content theme of the course will change depending on the expertise of the faculty member teaching the course. This course is a prerequisite for NJIT's Honors Capstone course (BIOL 495).

COURSE PREREQUISITES: Hum 102, R120:201/202, and BIOL 205/206.

TEXTBOOKS:

- ⊗ Writing Papers in the Biological Sciences 5th Edition © 2011 by Victoria E. McMillan; ISBN: 978-0312649715.
- ⊗ Reading Primary Literature: Practical Guide to Evaluating Research Articles in Biology 7th Edition Paperback © 2007 by Christopher Gillen; ISBN: 978-0805345995.

LEARNING EXPECTATIONS AND ASSESSMENT:

This course is designed to introduce students to primary literature in the research sciences and enable to find, read, and understand scholarly papers that relate to their interests and assignments. As a hybrid course, we will meet in person on Mondays and will have a weekly assignment to be completed and uploaded to Moodle before 8 am on the following Monday. During the first half of the course, class meetings will begin with a short quiz to evaluate learning of the previous week's material. Students are expected to complete all assigned reading in advance of the class meeting.

The second half of the course will focus on producing a short (few minutes) informational video that will explain in layman's terms a scientific finding on a topic chosen by the student and approved by the instructors. The students will design and produce the video and audio components for the video and will write a blog piece explaining the scientific findings from a published peer-reviewed manuscript. The blog and finished video will be uploaded to the NJIT website.

At the end of this course students should have the necessary skills to:

- 1) Analyze and interpret scientific data.
- 2) Give an effective scientific presentation.
- 3) Communicate biology through writing.
- 4) Find and evaluate scientific literature relevant to their interests.

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GRADING POLICY & SCALE:

ASSIGNMENT	PERCENTAGE
Participation	20%
Assignments	20%
Midterm Exam	30%
Presentation & Blog	30%
TOTAL	100%

GRADING SCALE			
A	88-100	C	60-66
B+	81-87	D	50-59
B	74-80	F	0-49
C+	67-73		



CLASS POLICIES:

- ⊗ **Cell Phones:** The use of cell phones during class or exam times is prohibited.
- ⊗ **Makeup Exam Policy:** There will be no makeup exams, except in rare situations where the student has a legitimate reason for missing an exam, including illness, death in the family, accident, requirement to appear in court, etc. The student must notify the Biological Sciences office and the Instructor that he/she will miss an exam. In all cases, the student must present proof for missing the exam TO THE DEAN OF STUDENTS OFFICE, e.g., a doctor's note, police report, court notice, etc., clearly stating the date and times.
- ⊗ **Academic Integrity:** Students are reminded of the Honor Code each one has agreed to abide by (at Rutgers or NJIT). Violations of Academic Integrity will be dealt with according to the guidelines indicated in the NJIT Academic Honor Code (<http://integrity.njit.edu/index.html>). Please re-read Article III of the Honor Code (page 4), which describes conducts that are considered unacceptable (cheating, violating the US Copyright law, etc.). Rutgers has similar rules (<http://www.ncas.rutgers.edu/oas/ai>).

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COURSE OUTLINE:

WEEK - DAY - DATE			CHAPTER - TOPIC	ASSIGNMENT
1	M	8-Sep	Introduction, expectations, finding literature	Scavenger hunt
2	M	15-Sep	Anatomy of a scientific paper	RPL pp 7-28
3	M	22-Sep	Results 1: Figures	Blog and original paper
4	M	29-Sep	Results 2: Tables and basic stats	Blog and original paper
5	M	6-Oct	Guest Speaker	Blog and original paper
6	M	13-Oct	How (not) to give a scientific talk	Blog and original paper
7	M	20-Oct	MIDTERM EXAM	
8	M	27-Oct	Five-minute presentations on project topic	Outline for project script
9	M	3-Nov	Work on verbiage and storyboard	Storyboard and draft
10	M	10-Nov	Practice demonstrations	Revisions
11	M	17-Nov	Production Day 1	
12	M	24-Nov	Production Day 2	Write accompanying blog
13	M	1-Dec	Production Day 3	Revise accompanying blog
14	M	8-Dec	Finishing touches, uploads	Peer assessments
FINALS			FINAL EXAM WEEK: DECEMBER 15-19, 2014	