

BIOL 320 – Discovering Biological Research

Fall 2015

Instructors:

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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).

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. 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 and needs.

Class meets:

Wednesday & Friday, 8.30am to 9.55am. Lectures will take place in CKB 219 (section 1 & 3 together). The rest of the time, section 1 & 3 will work separately in CKB 219 and 316 respectively.

Course outline:

Sep. 2 & 4

Intro

Sep. 9 & 11	Finding scientific literature
Sep. 16 & 18	Anatomy of a scientific paper
Sep. 23 & 25	Figures
Sep. 30 & Oct. 2	Tables and statistics
Oct. 7 & 9	Story telling (or guest speaker)
Oct. 14 & 16	Story telling (or guest speaker)
Oct. 21	Mid-term exam
Oct. 23	Group formation, project selection
Oct. 28	5 min project presentation
Oct. 30 to Nov. 11	Storyboard + outline preparation
Nov. 11	Collective review
Nov. 13 to 25	Writing + filming
Dec. 2 & 4	Collective review, final corrections
Dec. 9	Final project presentation

Office hours:

- Garnier: Thursday 2 to 3pm, or by appointment.
- Soares: Friday, 10 to 11am, or by appointment.

Course prerequisites:

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

Required texts:

None.

Recommended texts:

“Reading Primary Literature: A practical guide to evaluating research articles in biology”
by Christopher M. Gillen - ISBN-13: 978-08053-4599-5 ISBN-10: 0-8053-4599-X

Class website:

Via Moodle (<http://moodle.njit.edu>).

Grading policy:

- There will be one mid-term exam counting for 30% of the final grade.
- Quizzes in the form of multiple choice questions and/or short answer questions will count for 20% of the final grade.
- The final project will count toward the remaining 50% of the final grade. This includes participation in the project discussions, quality of the final project and quality of the final presentation of the project.

Grading scale:

A	88-100
B+	81-87

B	74-80
C+	67-73
C	60-66
F	0-59

Important rules and 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>).