

Critical Thinking for Research in the Life Sciences
BIOL 630
Fall 2009, Biology Dept, NJIT
Instructors: Daniel Bunker, Jorge Golowasch

Researchers in the biological sciences must be able to effectively apply the scientific method and be able to clearly communicate their ideas and results. This course will discuss with biology graduate students what research is by critically thinking about the scientific method and how it is applied in modern biological research. Specifically, we will apply a hands-on and interactive approach to learn how to produce a clear and effective scientific proposal. As we go along, and if time permits, we will also discuss how to prepare a scientific report.

Course prerequisites: Basic knowledge in biology.

Syllabus

No formal syllabus exists. We will regularly assign material to read and to write, which will be thoroughly discussed in class. The class will be highly interactive and self-paced.

Textbook: Turabian, K. L. (2007) A Manual for Writers of Research Papers, Theses, and Dissertations, University of Chicago Press, Chicago. ISBN 0-226-82337-7

Other recommended books:

- Booth, W. C., Colomb, G. G. and Williams, J. M. (2008) The Craft of Research, The University of Chicago Press, Chicago. ISBN
- Kuhn, Thomas S. 1996. The structure of Scientific Revolutions. 3rd Edition. The University of Chicago Press, Chicago. ISBN 0-226-225808
- Friedland, A.J. and Folt, C.L. (2009) Writing successful science proposal. 2nd edition. Yale University Press, new Haven. ISBN 978-0-300-11939

Class meets: Mon, Wed 1:00-2:25 pm, Colton 425

Grading: 20%: Weekly Assignments (delays in turning in weekly assignments will result in a zero grade because assignments will be discussed in the following class).
20%: Class participation
30%: Oral presentation
30%: Written final proposal (= final exam)

Course Web page: TBA

Office hours: JG: Monday and Wednesday 2:30-4:00 pm; DB:
e-mail: dbunker@njit.edu, golowasch@njit.edu

Phone: JG: (973) 353-1267 (Rutgers campus), DB: (973) 642-7537 (NJIT campus)

CLASS POLICIES:

Attendance and Participation: Students must attend all classes. Absences from class will be recorded. Two (2) absences will result in a warning. More than 2 absences may result in removal from the class. Absences also will hinder your ability to fully participate in class discussions and will therefore, significantly affect your grade.

Makeup Exam Policy: Since there will be no exams, there will be no makeup exams! Missing a class when an assignment is due will result in a zero grade unless a certified excuse can be presented (including illness, death in the family, accident, and required court appearances).

Academic Integrity: Students are reminded of the Honor Code each one has subscribed to when entering NJIT. Violations of Academic Integrity will be dealt with according to the guidelines indicated in the Academic Honor Code (<http://www.njit.edu/academics/honorcode.php>). Please re-read Article III of the Honor Code, which describes conducts that are considered unacceptable (cheating, violating the US Copyright law, etc).

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

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

Grade	Score range
A	87-100
B+	81-86.9
B	74-80.9
C+	67-73.9
C	60-66.9
F	0-59.9