

Biology 490: Cancer Biology Syllabus

Course Overview:

Times: Lectures: TNR 461 F 10:00-11:50 a.m.
Final Project: D2L Dropbox w/Turn-it-in, due May 15th by midnight

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Purpose and Goals: The field of cancer biology is incredibly multi-disciplinary. This field involves research in cellular and molecular biology, genetics, anatomy, physiology, virology, immunology, endocrinology, epidemiology, biochemistry, bioinformatics, biostatistics, radiology, pharmacology, environmental toxicology, nutrition, and others. I have selected a wide range of topics for discussion to reflect the diversity of this field. Upon reviewing these topics you will be able to identify common themes underlying carcinogenesis despite its diverse origins. You should also gain a greater appreciation of this multi-headed disease.

In addition to learning about cancer biology, a major course goal is to strengthen your written and oral communication skills, specifically in the biological sciences. Most weeks you will read either one or two primary research articles, as indicated in the course schedule. You will be responsible for leading an interactive group discussion for one article. Additionally, you will research and present background information the week prior to this group discussion. Students not presenting a primary research article for that week will write a short summary with questions to be peer reviewed in class. Toward the start of the semester, you will also provide a short demonstration on a randomly chosen type of carcinogen, including a “popular science” summary of that carcinogen. Finally, you will write a review article on a cancer biology/oncology topic of your choosing. This review article will be due at the end of the semester, with several intermediate due dates to verify sufficient progress is being made toward this project. Assignment details/requirements are described in separate handouts.

Lectures: Most lectures will be conducted in a split discussion/review format. We will spend the latter part of class hearing background information on one or two cancer topics in preparation for the following week. The beginning of lecture will include either one or two oral presentations on a primary research article(s) in cancer biology, accompanied with group discussion. Students who are *not* presenting at the beginning of class will still be summarizing each article’s findings, peer-reviewing these findings, and summarizing their reviews based on our discussions. **You are strongly encouraged to meet with me for advice at least one week before each of your review and discussion presentations.**

Course Materials:

Required Readings: We will start the semester by reading review articles on cancer, as well as government resources and global cancer statistics. For the rest of the semester we will read and discuss several primary research articles on various cancer topics. These **required** readings will be posted on D2L. Another required resource pertinent to scientific communication is A Short Guide to Writing About Biology, by Jan Pechenik. It is available at the school bookstore. We will discuss sections from this book in class as indicated in the course schedule, with pages to be announced later.

Suggested Resources: A useful grammatical reference is The Elements of Style by W. Strunk Jr. and E. B. White. This book is available for **free** through the Gutenberg project (link posted on D2L). Two suggested references on cancer include the World Cancer Report 2014 by the International Agency for Research on Cancer, and Fundamentals of Oncology, Ed. 4 by H. C. Pitot, 2002. Both of these textbooks are available in digital format through links on the course website. Many additional pertinent cancer links are also posted on the course website.

Course Requirements and Grading:

Letter Grades:

A = 100-93% A- = 92.9-90% B+ = 89.9-87% B = 86.9-83% B- = 82.9-80% C+ = 79.9-77%
C = 76.9-73% C- = 72.9-70% D+ = 69.9-67% D = 66.9-60% F ≤ 59.9%

Point Distribution:

Article summary + Peer review	10 pts (7 + 3)	*100 pts
Background presentation		40 pts
Article presentation		40 pts
“Pop Science”		
Article		15 pts
Presentation		5 pts
Review article		
References		5 pts
Outline		5 pts
Rough Draft		15 pts
Final Draft		75 pts
Unfixed corrections	-2 pts each, <i>minimum</i>	
Unexcused absences	-15 pts each	
Total		300 pts

*We will discuss either 12 or 13 primary research articles. *At minimum you must submit 10 paired summary / peer review sets for grading, as indicated above.* If you choose to submit more than 10 pairs, I will drop your lowest scores up to the number of excess submissions. You **MUST** still read all primary research articles (or other readings) to contribute to the in-class discussions.

Assessment Exam: Satisfactory completion of this course also requires the completion of the Biology Department Comprehensive Exam. This exam is available on Wednesday, May 2nd and Thursday, May 3rd at 6:00pm in TNR 120. Please let me know which date you plan on taking this exam no later than spring break. Test scores are used to assess general student learning; this metric is used to evaluate how well we have trained our students in the major on various topics in Biology. Scores will neither be made available to you, nor your instructor, and they will have no bearing on your letter grade. However, your BIO 490 grade will be withheld (that is, **you will receive an incomplete**) until the exam is taken.

Electronic Devices:

Please arrive to lecture on time and turn your cellphone off. While e-readers are permissible in class, you will not be permitted to use such devices for non-class activities (i.e., Facebook, SnapChat, etc.). Should you disregard this policy, you will not be able to use electronic devices in class in the future and will forfeit your summary and review points for the day.

Absence Policy and Missing Assignments:

You are required to attend lecture to earn points toward your article summary and peer review assignments. If you skip a lecture, you forfeit these points, even if you have written and submitted your article summary. **Each unexcused absence will result in a deduction of 15 points from your total grade!** OK, I will also take into account absences due to graduate school interviews and similar important non-emergency events. However, you *must* be present for your assigned background presentation and primary research article presentation. I will *only* consider a make-up presentation if you have a *documented illness or emergency*. You will need to provide me advanced notice of such conflicts.

Assignments and Dropbox:

Article assignments must be completed and uploaded to the D2L dropbox prior to class. **You will also need to bring a copy to class for a peer review.** After our discussion and peer review session, you will upload discussion comments to the D2L dropbox within one week. If you forget to upload your file prior to the

discussion, but still have a printed copy, you must bring this to my attention at the beginning of class! You may incur a penalty if you repeatedly forget to upload your discussions or forget to bring your printed copy for peer review.

Review articles and popular science articles will also be uploaded to the D2L dropbox. Research articles will be submitted using the TurnItIn service. The TurnItIn service checks the originality of your work. It is very likely that your submission will have a 10% similarity score or greater; high similarity is OK *provided that* the material flagged by the service corresponds to your reference section, or an internal citation. You should not use lengthy quotes and phrases; these articles should be in your own words! The TurnItIn service takes time to evaluate your submission. Therefore, if you are hoping to find out if your TurnItIn score is acceptable early, I recommend you submit your review article by May 8th. Suspected plagiarism will be dealt with in accordance with the university's academic misconduct policy (see below). **Failure to submit a fully-cited, original review article will result in an automatic F for the ENTIRE COURSE!** Point deductions will be incurred if this review article is submitted late or submitted in an incomplete format.

Accommodations:

If you have a *reasonable* course conflict (athletes with a scheduled event, a graduate school recruitment date, knee surgery, etc.), you must notify me ASAP! I *MAY* choose to wave the absence deduction and allow you to still submit an article summary or pre-recorded popular science presentation. In compliance with the Americans with Disabilities Act (ADA), I will make every effort to honor requests for reasonable accommodations made by individuals with disabilities. If you have a disability or other learning need and require accommodations, please register with the Disability and Assistive Technology Center (6th floor Albertson Hall) and *let me know as soon as possible*. Requests for accommodation can be responded to most effectively if I receive the requests early in the semester. Such requests are confidential. More information about the ADA at UWSP can be found here: <https://www.uwsp.edu/hr/Pages/Affirmative%20Action/ADA.aspx>.

UWSP Community Bill of Rights and Responsibilities:

UWSP values a safe, honest, respectful and inviting learning environment. A set of expectations for students and instructors, known as the Rights and Responsibilities document, is intended to help establish a positive living and learning environment. This document is available through the Dean of students' webpage, or here: https://www.uwsp.edu/dos/Documents/2015_Aug_Community%20Rights%20and%20Responsibilities%20Web.pdf.

Academic Policy:

The Rights and Responsibilities document also includes the policies regarding academic misconduct, which again can be found at the link in the previous paragraph. A summary of this information is also provided at the Dean of students' webpage, or here: <https://www.uwsp.edu/dos/Documents/AcademicIntegrityBrochure.pdf>. The *minimum penalty* for violating this policy is a recorded zero for the assignment, quiz, or project in question. Due to the significant weight of the final project, a higher minimum penalty is set forth (as stated above) should plagiarism be committed on this assignment.