

Bi123
The Biology of Cancer

Instructor

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Cancer has been a recognized ailment for many centuries, but was not considered a serious threat to human health until the 1900s, when advances in medical science began to mitigate the more common forms of morbidity and mortality. Cancer is really a collection of over one hundred diseases that show various clinical differences, but have similar underlying causes and effects: the normal genetic controls of cell division malfunction, allowing a cell to undergo unrestrained multiplication, usually leading to an anomalous mass of cells (a tumor), some of which may spread to distant locations in the body to establish further tumors. Cancer is thus rightly called a genetic disease. We will focus our attention on the genetics and cell biology of cancer, particularly since tremendous advances in our understanding of the initiation and progression of cancer, and in the promise of effective treatment, have been realized in the past two decades through basic research in genetics and cell biology.

This is an introductory course, meaning that there are no prerequisites for enrollment. Though a background in biology is useful, it is neither essential nor necessary. This course will be taught assuming that students have no more than a middle- or high-school level familiarity with basic life sciences (specifically regarding cells and genes). Those with no experience with or recollection of biology may find the pace of this course quite rapid; those well-versed in biology may find the pace rather slow. This is the compromise we must accept in an introductory course for an audience of diverse academic backgrounds.

Format

There will be two 80-minute lectures each week. Attendance is not mandatory, but some of the information that you will be expected to assimilate (and demonstrate on exams) will not be found in the reading. There will also one 50 minute discussion each week.

Course packet

A course packet that contains selected readings is required, and can be purchased at the UO Bookstore. If a packet is not available, you must request one at the Bookstore, and they should have it for you within 24 hours.

There are no currently adequate texts for a course on cancer biology at the introductory level, and thus there is no required text for this course. However, some books do address many of the topics that we will cover in a thorough way without overwhelming the reader with technical

jargon. A particularly good general book that emphasizes the molecular biology of cancer is *One Renegade Cell*, by Robert Weinberg. A broader general text is the out-of-print *Cancer: The Misguided Cell*, by David Prescott and Abraham Flexer. For a more detailed treatment of several topics, *The Biological Basis of Cancer*, by Robert McKinnell, et al., is an excellent resource. Copies of these books will be on reserve in the Science Library:

Discussions

Discussion sections are on Thursdays. Attendance is mandatory, and since the course is full you cannot make up an absence by attending a different section. A separate handout describes the work and topics we plan to accomplish in the discussion sections.

Grading

The course grades will be determined from the highest score derived from 3 methods:

| | Method 1 | Method 2 | Method 3 |
|------------|----------|-----------------------|-----------------------|
| Exam 1 | 100 pts | 150 pts (100 x 1.5) | 0 |
| Exam 2 | 100 pts | 0 | 150 pts (100 x 1.5) |
| Final exam | 150 pts | 200 pts (150 x 1.333) | 200 pts (150 x 1.333) |
| Discussion | 150 | 150 | 150 |

No other opportunities for points will be offered. Early or makeup exams will not be offered. If you miss a midterm exam your grade will be based upon the method 2 or method 3 scores.

Course web site

The course web site address is <http://biology.uoregon.edu/classes/bi123w09/>. The site is linked to Blackboard. It contains the lecture and lab schedules, staff contact information, supplemental material, exam keys, announcements, and related links. Check it regularly, as this is the best mechanism by which we can notify you of schedule changes and updates.

Class conduct

Class starts promptly at 2:00 and ends at 3:20. Please arrive on time and do not pack up before the conclusion of the lecture. Arriving late and leaving early is disruptive to others around you and to the speaker. Do not talk during lecture in a volume audible to anyone but the intended recipient, or allow cell phones or pagers to ring during lecture or discussion.

Please be familiar with the student conduct code, which can be viewed at
http://studentlife.uoregon.edu/programs/student_judi_affairs/conduct-code.htm

Sanctionable offenses include academic dishonesty (cheating, plagiarism, etc.) and disruptive behavior (interference with the process of instruction, unreasonable noise, behavior that results in unreasonable annoyance, etc.). Sanctions can include, but are not limited to, a failing grade in the course.