

Dr. Julian Lum

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Description:

This course will cover molecular events that lead to cancer. The course will be divided into sections structured around first understanding important signal transduction pathways in cancer and then discussing some of the major types of cancer, including leukemia, breast, prostate and CLL. Special emphasis will be placed on understanding the signaling pathways for each of these cancers. The course will be held in a hybrid format. The first half of the course will be held in person in the classroom. The second half of the course will be held online. This course is intended for students who have completed to have familiarity with cell biology and cell signaling – i.e., have taken biology 360, OR either of Bioc 300a or Bioc 300b. If you wish to review molecular cancer details, there is an excellent textbook by Dr. Robert A. Weinberg, 'The Biology of Cancer' by Garland Science (ISBN 0781153426) which is available in background material or if you simply learn better from textbooks.

Description from the UVic Calendar:

Prerequisites: BIOL 225, 230, AND 1 of the following: BIOL 360 (by appointment) . The instructor will be present. Dr. Walter is adjunct faculty and his time on campus, and DrLum is not on campus except for this course. If these times do not work for you, email to set up an alternate time.

Brightspace:

This course uses the university Brightspace learning/teaching resource. To access this Course, use your Netlink ID and password and log onto Brightspace from

Students are expected to be present for the midterm and final exam on the specified dates. Failure to write the midterm exam as described above will result in a grade of 0% for the exam unless for illness, accident, or family affliction. Students who miss the midterm exam for one of the legitimate, documented reasons listed (described more below) will write a deferred midterm exam within *approximately* 10 business days of the midterm date.

N grades

Students who have completed the following elements will be considered to have completed the course and will be assigned a final grade: The Midterm and the Final Exam.

Failure to complete one or more of these elements will result in a grade of “N” regardless of the cumulative percentage on other elements of the course. An N is a failing grade, and it factors into a student’s GPA as 0. The maximum percentage that can accompany an N on a student’s transcript is 49.

Therefore, you must write the midterm exam and the final exam to pass the course.

Furthermore, if you have any emergency or any situation (**That may include but not limited to**; illness, mental health and wellness, or lack of access to informatilu5(a)9.9 (t)

Revised UVic Grading Scheme is below (effective May 1, 2012):

Passing Grades	Grade Point Value	Percentage for Instructor Use Only *	Description
A+	9	90 – 100	Exceptional, outstanding and excellent performance. Normally achieved by a minority of students. These grades indicate a student who is self-initiating, exceeds expectation and has an insightful grasp of the subject matter.
A	8	85 – 89	
A-	7	80 – 84	
B+	6		
B			
B-			

Territory acknowledgement:

All the instructors involved with Biol 465 acknowledge with respect the Lekwungen peoples on whose traditional territory the university stands and the Songhees, Esquimalt and WSÁNE peoples whose historical relationships with the land continue to this day. Please see:

<https://www.uvic.ca/services/indigenous/facultystaff/territory->

Provisional Lecture Schedule 2022 (Changes will be necessary)

Week 1: SEMESTER STARTS Wed Sept. 7 ENDS Mon Dec. 5 2022

1. Wed Sept 7. Introductions/Outline/Cancer Overview – Walter.
2. Fri Sept 9. Introduction to concepts, terms, and overview of Cancer, defining the hallmarks – Walter

Week 2:

3. Tues Sept 13. Hallmarks of cancer – 1st hallmark – self-sufficiency in growth factors - Walter
4. Wed Sept 14. Oncogenes & tumor suppressors how they relate to the hallmarks of cancer - Walter
5. Fri Sept 16. Self-sufficiency in growth signals, HER2 / EGF - Walter

Week 3:

6. Tues Sept 20. The Hallmarks of Cancer - Oncogenes, RTK & Ras – Walter
- Tues. Sept 20. **Last day for 100% reduction of tuition fees for first term and full year courses**
7. Wed Sept 21. Ras and Insensitivity to Antigrowth Signals – Walter
- Fri Sept 23 Last Day for adding courses that begin in the second term**
8. Fri Sept 23. Vitamin D, the immune system and cancer – Walter

Week 4:

9. Tues Sept 26. Cancer immunoediting and Apoptosis – Walter
10. Wed Sept 27. Evasion of apoptosis in Cancer – Walter
- Fri. Sept 30. National Day for Truth and Reconciliation**
- Fri. Sept 30. Last day for paying first term fees without penalty**

Week 5:

11. Tues Oct 4. Apoptosis, P53, Bcl-2 proteins and senescence – Walter
12. Wed Oct 5. Limitless replicative potential and inflammation – Walter
13. Fri Oct 7. Tumor inflammation and Cell-cell interaction and ECM. – Walter

Week 6:

- Monday Oct. 10. Thanksgiving Day**
- Tues Oct 11 Last Day for 50% reduction of tuition fees for standard courses**
14. Tues Oct 11. Cancer and the ECM, genomic instability, DNA repair, tumor metabolism – Walter
15. Wed Oct 12. Tumor metabolism and the immune system in cancer – Walter
16. Fri Oct 14. The immune system and cancer. – Walter

Week 7

17. Tues Oct 18. **Midterm 30% (Walter)**
18. Wed Oct 19. Completion of the Immune system (slide 20) - Walter
19. Fri Oct 21. DNA damage and cancer - Walter

Week 8:

20. Tues Oct 25 DNA damage and cancer - Walter
21. Wed Oct 26. Paper “Targeting macrophages sensitizes CLL cells to death and inhibits Disease Progression”- Walter
22. Fri Oct 28. Review of paper targeting macrophages – Walter
- Monday Oct 31 Last Day to Drop Courses without Failure**

Week 9:

23. Tues Nov 1 Summary of CLL paper, Breast Cancer and estrogen introduction – Walter
24. Wed Nov 2. Inherited Cancers – Lum
25. Fri Nov 4. Synthetic Lethality – Lum

Reading break following week

Week 10:

26. Tues Nov 8. Ovarian Cancer – Lum
- Wed, Nov. 9 -11 Reading break, Thursday Nov 11, Remembrance Day**

