

MCB 425

Cancer Discoveries

Spring 2022

Tuesday and Thursday 11 a.m. – 12:15 p.m.

Psychology 306

Instructor

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Office hours

Tuesdays 2:00-3:00 pm, LSS 348A

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Office hours

Wednesday 5:30-6:30, LSS 4th floor lobby

Cancer Discoveries is a journal article-based course that is designed to help advanced students understand cancer genetics and epigenetics, cell polarity, tissue microenvironment, signal transduction, metastasis and immunotherapy. Each topic is covered in a block that includes both basic science and clinical therapeutics, and ethical impacts will also be discussed. Recent advances and their implications for the field will be emphasized. This is the second of a two-course series concerning the field of cancer biology (first course in the series is MCB 325).

Recommended/Required Text: Journal articles will be assigned, which will be available to students through D2L. Additional material will be taken from *The Biology of Cancer*, but will be provided in class.

Prerequisites: Students are recommended to have taken MCB 305, 325 or 410 and required to have taken 181.

Grades: Grades will be based on class-based problem sets, journal summaries and exams. There will be no curving.

Problem Sets

Each week, students will discuss (in groups) problems posed to the class for a total of 26 problem sets throughout the semester. Students will turn in their individual answers to the problem sets.

The top 20 scores (5 pts/assignment) will be counted for each student.

Total points for problems: 100

Journal Summary

- Once per block, a summary of 1 research article can be turned in (individual). The research articles that can be summarized will be outlined in class. Two summaries are due during the semester, and one can be replaced. A rubric can be found under the assignment tab.
- Summary to include the following:
 - Background summary
 - Hypothesis
 - 1 key experiment (multi-panel; including a description of the methodology and controls)
 - Conclusions of the article and how the key experiments demonstrate the conclusions
 - Ethics: does the target and any potential drugs have any possible ethical consideration for patients? Are there potential toxicities? Are there limits to access?
- *Total points for journal summaries: 100 (50 points per summary)*

Exams

- There will be two exams during the semester, including a non-comprehensive final exam. Questions will be short-answer and each exam will be worth 50 points.
- Exams will be based on lecture material, which will be available on D2L.
- The date and time of the final exam or project, along with links to the Final Exam Regulations, <https://www.registrar.arizona.edu/courses/final-examination-regulations-and-information>, and Final Exam Schedule, <http://www.registrar.arizona.edu/schedules/finals.htm>

Total points for exams: 100 (50 points per exam)

If you accumulate the following points, you will receive the following grade:

- A (270-300)
- B (240-269)
- C (210-239)
- D (180-209)
- E (179 or below)

Midterm Regrades:

Regrade requests must follow these steps:

1. Download the answer key (found on the content tab on D2L), and compare your answer to the key.
2. On a separate piece of paper, explain why you should receive more points according to the key. If the points were simply added wrong and/or transferred to D2L incorrectly, just bring the original assignment to Dr. Schroeder and ask her to fix it.

3. Attach your request to your original assignment and turn in to Dr. Schroeder, who will review the request.
4. Regrade requests must be made within 2 weeks of the assignment.

Make-up Assignments: Make-ups must be requested **within 48 hours of the exam date**. No make-ups are given for problem sets, as you can drop your bottom 5 scores.

Course objectives: By the end of this course, each student should be able to articulate mechanisms in significant detail regarding cancer and cancer metastases, and identify current efforts at targeting the cellular and molecular drivers of the disease and their ethical implications. Students will also have attained skill in deriving and testing hypothesis, and experimental interpretation. Students will also be able to read, interpret, and contextualize research articles on cancer mechanisms and treatments.

University Policy on Absences:

The UA policy regarding absences for any sincerely held religious belief, observance or practice will be accommodated where reasonable, <http://policy.arizona.edu/human-resources/religious-accommodation-policy>.

Absences pre-approved by the UA Dean of Students (or Dean Designee) will be honored. See: <https://deanofstudents.arizona.edu/absences>

The UA's policy concerning Class Attendance, Participation, and Administrative Drops is available at: <http://catalog.arizona.edu/policy/class-attendance-participation-and-administrative-drop>

Special needs and accommodations:

Our goal in this classroom is that learning experiences be as accessible as possible. If you anticipate or experience physical or academic barriers based on disability, please let me know immediately so that we can discuss options. You are also welcome to contact the Disability Resource Center (520-621-3268) to establish reasonable accommodations. For additional information on the Disability Resource Center and reasonable accommodations, please visit <http://drc.arizona.edu>.

University Policy on Student Conduct:

I. The Arizona Board of Regents' Student Code of Conduct, ABOR Policy 5-308, prohibits threats of physical harm to any member of the University community, including to one's self. See: <https://policy.arizona.edu/education-and-student-affairs/threatening-behavior-students>.

II. Students are encouraged to share intellectual views and discuss freely the principles and applications of course materials. However, graded work/exercises must be the product of independent effort unless otherwise instructed. Students are expected to adhere to the UA Code of Academic Integrity as described in the UA General Catalog. See: <https://deanofstudents.arizona.edu/policies/code-academic-integrity>.

The University Libraries have some excellent tips for avoiding plagiarism, available at <https://ask.library.arizona.edu/faq/328749>.

Selling class notes and/or other course materials to other students or to a third party for resale is not permitted without the instructor's express written consent. Violations to this and other course rules are subject to the Code of Academic Integrity and may result in course sanctions. Additionally, students who use D2L or UA e-mail to sell or buy these copyrighted materials are subject to Code of Conduct Violations for misuse of student e-mail addresses. This conduct may also constitute copyright infringement.

III. The University is committed to creating and maintaining an environment free of discrimination; see <http://policy.arizona.edu/human-resources/nondiscrimination-and-anti-harassment-policy>

Student behavior

Students are asked to refrain from disruptive conversations and activities either online or in person during lecture. Students observed engaging in disruptive activity will be asked to cease this behavior. Students who continue to disrupt the class will be asked to leave class and may be reported to the Dean of Students.

Note: The information contained in the course syllabus, other than the grade and absence policies, may be subject to change with reasonable advance notice, as deemed appropriate by the instructor.