

## CANCER BIOLOGY, BIOL 846 (3 CREDITS)

FALL 2021

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## INSTRUCTOR INFORMATION

**Instructor:** Dr. Saili Moghe

**Email:** [moghes1@unk.edu](mailto:moghes1@unk.edu)

**Office Hours:** You may contact me through email (using your Lopermail account) or Canvas inbox messages. The weekly discussion boards on Canvas can also be used to post general comments/questions/concerns. I will respond to emails, inbox messages and discussion board posts within 48 hours. If a video/voice call appointment is needed, please email me to set up a time.

## COURSE DESCRIPTION

This course is designed to give you a comprehensive understanding of the basic biology of cancer, and its pathology. We will also explore classic and emerging cancer treatment modalities, and the biological basis behind them. Finally, we will briefly discuss strategies to prevent cancer incidence.

## LEARNING OBJECTIVES

1. Gain a core understanding of the molecular and genetic basis of cancer
2. Name and describe the characteristics of cancer cells
3. Understand and recognize the complexity of cancer and the evolution of cancer cells throughout disease progression
4. Understand the cellular and molecular basis of strategies for current and future cancer prevention and treatment methods
5. Identify the molecular and genetic basis of various cancers
6. Describe and determine how different cancer therapeutics and preventative methods work, and discuss scenarios in which they may or may not be effective

## COURSE MATERIALS

- **Required Textbooks:**
  - The Biology of Cancer (2<sup>nd</sup> edition) by Robert Weinberg
- **Technical Requirements:**
  - Full access to a computer and high-speed internet
  - Word processor for written assignments (including ability to convert into PDF).
  - Respondus LockDown browser (available for download through Canvas course site).

## COURSE STRUCTURE

Weekly materials will be posted on Canvas every Tuesday by 8:00 am (CST), and an announcement will always go up at this same time letting you know that all materials are up, and provide any information and other details you need to know for that particular week.

## BIOL 846 Course Syllabus

Instructor: Dr. Moghe

Each week the following will be posted:

- Video lectures
- Outline lecture notes corresponding to the lecture videos
- Assigned readings from the textbook or supplemental readings
- Quiz or Assignment
- Link to the weeks discussion board for questions/concerns/comments
- Any needed supplementary materials/resources

## ASSESSMENTS

Your progress in class will be assessed by quizzes, assignments, and exams.

- **Assignments**
  - Every other week, 12pts each (total of 5 assignments)
  - 1-2 page short essay questions
  - 1 week to complete assignment
- **Quizzes**
  - Every other week, 10pts each (total of 6 quizzes)
  - Questions will be multiple choice, true/false and occasionally short answer or fill-in-blanks
  - Timed at 10 minutes per quiz, closed book, will require LockDown browser, to be complete in one-sitting
  - 1 week access
- **Regular Exams**
  - 100pts each (total of 2 Exams)
  - 2 parts: multiple choice (70pts) and 2 essay questions (30pts)
  - Timed at 60 minutes per Exam, closed book, will require LockDown browser, to be complete in one-sitting
  - 1 week access
- **Final Exam**
  - 3 parts: comprehensive multiple choice (50pts), 2 comprehensive essay questions (30pts), multiple choice covering last section of course (70pts)
  - Timed at 70 minutes for comprehensive section, 60 minutes for the rest, each part should be complete in one sitting
  - Closed book, will require LockDown browser
  - 1 week access

## GRADING SCHEME

ASSESSMENT TYPE	POINTS
2 Regular Exams (100 points each)	200
1 Final Exam (150 points each)	150
6 Quizzes (10 points each)	60
5 Assignments (12 points each)	60
1 Introduction	10
<b>Total Points</b>	<b>480</b>

## GRADE ASSIGNMENT

Finals grades will be assigned using the following grade scale:

A+ 97 - 100%	B+ 88 - 89%	C+ 78 - 79%	D+ 68 - 69%	F Below 60%
A 93 - 96%	B 83 - 87%	C 73 - 77%	D 63 - 67%	
A- 90 - 92%	B- 80 - 82%	C- 70 - 72%	D- 60 - 62%	

All grades are final unless there is a calculation error.

## EXPECTATIONS FROM STUDENTS

As students enrolled in this class it is your responsibility to meet the following basic expectations:

- Log on to Canvas at least weekly and keep up with the posted course materials. Make sure that you read the Announcements and stay informed about what is happening and going to happen in class.
- Complete exams and quizzes within the time that they are available and make any assignment submissions by the given deadlines (keep in mind all times are in Central Standard Time, so please account for any time differences if needed).
- Seek help when you need it and do not wait till the last moment to do this.
- You are encouraged to utilize the discussion board not only for any comments/questions/concerns that you may have, but also to interact with your classmates (provided you keep such interactions primarily related to the class). Always be respectful to everyone when using discussion boards.

Understandably, you all have several commitments in your life other than this class. Nonetheless, as a student who has registered for this class, it is your full responsibility to ensure that you can meet the above requirements and commit the needed time for this course.

## CLASS POLICIES

- **Assignments, quizzes, exams will receive zero (0) points if they are not completed by the given due dates**
- **Extensions or rescheduling** of exams/quizzes/assignments will NOT be possible unless circumstances are exceptional – a legitimate excuse (based on my discretion) with provided documentation will be required for such considerations. In such situations, please contact me regarding what documentation you will need to submit (do not directly submit documentation unless asked).
- **Policy on academic dishonesty:** Anyone caught plagiarizing or cheating on any exercise you will receive a 0 for that exercise; subsequent violations will result in referral to the Vice Chancellor for Academic Affairs for dismissal from the university. UNK's Students Code of Conduct is outlined here:  
<https://www.unk.edu/offices/reslife/documents/university-of-nebraska-at-kearney-student-code-of-conduct.pdf>.

## INCOMPLETE AND COURSE WITHDRAWALS

**Incomplete:** In unusual circumstances beyond the student's control, an incomplete (I) may be issued. The (I) is issued as a final grade with the student having 12 months to complete the necessary work. If the coursework is not completed in this time, the (I) will be converted to a failing grade (F) on the student's transcript. When needed, requests for an Incomplete must be made before the end of the semester and will require valid documentation.

**Dropping/Withdrawing:** Students may withdraw from the course **before** the midpoint of the course (**5pm, Oct 22**) and a (W) will appear on their transcript. Students are responsible for completing this process using the MyBlue self-service. Instructors are not able to withdraw students. If the student drops the class, the (W) will not contribute to the student's overall GPA.

## COPYRIGHT LAW AND COMPLIANCE

Materials in this course may be protected by copyright and are intended only for the use of students enrolled in this course for the purposes of this course. Materials from this course may not be disseminated, adapted, copied, or published. Any violation of this is a violation of Federal copyright law.

## STUDENTS WITH DISABILITIES

It is the policy of the University of Nebraska at Kearney to provide flexible and individualized reasonable accommodation to students with documented disabilities. To receive accommodation services for a disability, students must be registered with the UNK Disabilities Services for Students (DSS) office, 175 Memorial Student Affairs Building, 308-865-8214 or by email [unkdso@unk.edu](mailto:unkdso@unk.edu).

## UNK STATEMENT OF DIVERSITY AND INCLUSION

UNK stands in solidarity and unity with our students of color, our LatinX and international students, our LGBTQIA+ students and students from other marginalized groups in opposition to racism and prejudice in any form, wherever it may exist. It is the job of institutions of higher education, indeed their duty, to provide a haven for the safe and meaningful exchange of ideas and to support peaceful disagreement and discussion. In our classes, we strive to maintain a positive learning environment based upon open communication and mutual respect. UNK does not discriminate on the basis of race, color, national origin, age, religion, sex, gender, sexual orientation, disability or political affiliation. Respect for the diversity of our backgrounds and varied life experiences is essential to learning from our similarities as well as our differences. The following link provides resources and other information regarding D&I: <https://www.unk.edu/about/equity-access-diversity.php>

## STUDENTS WHO ARE PREGNANT

It is the policy of the University of Nebraska at Kearney to provide flexible and individualized reasonable accommodation to students who are pregnant. To receive accommodation services due to pregnancy, students must contact Cindy Ference in Student Health, 308-865-8219. The following link provides information for students and faculty regarding pregnancy rights. <http://www.nwlc.org/resource/pregnant-and-parenting-students-rights-fags-college-and-graduate-students>

## REPORTING STUDENT SEXUAL HARASSMENT, SEXUAL VIOLENCE OR SEXUAL ASSAULT

Reporting allegations of rape, domestic violence, dating violence, sexual assault, sexual harassment, and stalking enables the University to promptly provide support to the impacted student(s), and to take appropriate action to prevent a recurrence of such sexual misconduct and protect the campus community. Confidentiality will be respected to the greatest degree possible. Any student who believes she or he may be the victim of sexual misconduct is encouraged to report to one or more of the following resources: **Local Domestic Violence, Sexual Assault Advocacy Agency** 308-237-2599, **Campus Police (or Security)** 308-865-8911, **Title IX Coordinator** 308-865-8655. Retaliation against the student making the report, whether by students or University employees, will not be tolerated. If you have questions regarding this information please contact Mary Chinnock Petroski, Chief Compliance Officer ([petroskimj@unk.edu](mailto:petroskimj@unk.edu) or phone 308-865-8400).

## UNIVERSITY POLICIES RELATED TO COVID-19

All vaccinated faculty, staff and students, as well as visitors to campus, are encouraged, but not required, to wear face masks indoors. Unvaccinated individuals should continue to wear masks. (Masks are required indoors for all individuals at the University of Nebraska Medical Center.) <https://nebraska.edu/news-and-events/news/2021/08/university-of-nebraska-system-updates-covid-19-protocols>. Consistent with the University of Nebraska's guiding protocols, there are circumstances in which many people in our community may not be able to be vaccinated. Faculty may request, not require, that students wear masks in class under circumstances that clearly indicate unnecessary yet controllable risk of infection. Please note that pandemic precautions are subject to change.

BIOL 846 Course Syllabus

Instructor: Dr. Moghe

**TENTATIVE CLASS SCHEDULE, BIOL 846**

- All weekly materials will be posted by 8 am on Tuesdays
- Quizzes and exams will be available from 8 am on Tuesday until 11:59pm of the following Wednesday
- All times in the syllabus and Canvas are in U.S Central Standard Time

Week	Topic	Reading	Assessment
1 (Aug 23 – Aug 29)	Lesson 1: The Nature of Cancer	Chapter 1 & 2	Assignment 1 (due Sep 1)
2 (Aug 30 – Sep 5)	Lesson 2: Tumor Viruses	Chapter 3	Quiz 1 on Lesson 1 (Available: Aug 31 – Sep 8)
3 (Sep 6 – Sep 12) *Labor day: Sep 6	Lesson 3: Oncogenes	Chapter 4	Assignment 2 (due: Sep 15)
4 (Sep 13 – 19)	Lesson 4: Growth Factors & Receptors	Chapter 5	Quiz 2 on Lesson 2 & 3 (Available: Sep 14 – Sep 22)
5 (Sep 20 – Sep 26)	Lesson 5: Cytoplasmic Signaling	Chapter 6	No assignment/quiz/exam
6 (Sep 27 – Oct 3)	Lesson 6: Tumor Suppressors	Chapter 7	EXAM 1 on Lesson 1- 5 (Available: Jun Sep 28 – Oct 6)
7 (Oct 4 – Oct 10)	Lesson 7: Cell Cycle Clock	Chapter 8	Assignment 3 (due: Oct 13)
8 (Oct 11 – Oct 17)	Lesson 8: Apoptosis	Chapter 9	Quiz 3 on Lesson 6 & 7(Available: Oct 12 – Oct 20)
9 (Oct 18 – Oct 25) Fall break: Oct 18 – 19 Last day to drop class: Oct 22	Lesson 9: Eternal Life	Chapter 10	Assignment 4 (due: Oct 27)
10 (Oct 25 – Oct 31)	Lesson 10: Multi-step tumorigenesis	Chapter 11	Quiz 4 on Lesson 8 & 9 (Available: Oct 26 – Nov 3)
11 (Nov 1 – Nov 7)	Lesson 11: Multi-step tumorigenesis	Chapter 12	Exam 2 on Lesson 6 – 10 (Available: Nov 2 – Nov 10)
12 (Nov 8 – Nov 14)	Lesson 12: Angiogenesis	Chapter 13	Assignment 5 (due: Nov 17)
13 (Nov 15 – Nov 21)	Lesson 13: Metastasis & Invasion	Chapter 14	Quiz 5 on Lesson 11 & 12 (Available: Nov 16 – Nov Dec 1)
14 (Nov 22 – Nov 28) Thanksgiving break: Nov 24 - 27	Lesson 14: Cancer & the Immune System	Chapter 15	No assignment/quiz/exam
15 (Nov 29 – Dec 5)	Lesson 15: Cancer Prevention & Therapeutics	Chapter 16	Practice Quiz on Lesson 13 & 14 (Available: Nov 29 – Dec 5)
16 (Dec 6 – Dec 12)	FINALS WEEK		FINAL EXAM (Available: Dec 7 – Dec 15)
17 (Dec 13 – Dec 16)	FINALS WEEK		FINAL EXAM (Available: Dec 7 – Dec 15)

**END OF DOCUMENT**