

**Cancer Biology, BIOL 846  
Online Course (3 credit hours)  
Spring 2018**

**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.

**Course Goals:**

1. Gain a core understanding of the molecular and genetic basis of cancer
2. Understand the complexity of cancer development and progression
3. Be familiar with key concepts and methodologies in cancer research
4. Understand the cellular and molecular basis of strategies for current and future cancer prevention and treatments methods

**Learning Objectives:**

1. Identify the molecular and genetic basis of various cancers
2. Recognize the complexity of cancer and the evolution of cancer cells throughout disease progression
3. Identify methodologies that can be used to study different features of cancer
4. Describe and determine how different cancer therapeutics and preventative methods work, and discuss scenarios in which they may or may not be effective

**Instructor:**

**Dr. Saili Moghe**

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

**Canvas Inbox:** you can also use the Canvas inbox to contact me

**Canvas discussion boards:** general comments/questions/concerns can be posted on weekly discussion boards. Please ensure that these questions are general (rather than pertaining to you specifically).

I will respond to emails/Canvas inbox/discussion board posts, within 48 hours.

**Course Materials and Requirements:**

**Required Textbook:** The Biology of Cancer (2<sup>nd</sup> edition) by Robert Weinberg

**Technical Requirements:** Full access to a computer and the Internet

## **Course Structure**

Weekly materials will be posted on Canvas by Monday at 12:00pm (CT), and an announcement will always go up at this same time letting you know that all materials are up, as well as any information or details you need to know for that particular week.

Each week, the following will be posted:

- Video lectures
- Outline notes corresponding to the lecture videos
- Assigned readings from the textbook and/or supplemental readings
- Link to the weeks discussion board for questions/concerns/comments
- Quiz/Exam/Assignment (if scheduled for the week)

## **Assessments**

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

- **Writing Assignments**
  - Typically every other week, 10pts each (total of 5 assignments)
  - 1-2 page short essay questions
  - 1 week
- **Quizzes**
  - Typically every other week, 10pts each (total of 5 quizzes)
  - Questions will be multiple choice, true/false
  - 6-day access to each quiz
  - Timed at 10 minutes per quiz
- **Regular Exams** 100pts each (total of 2 Exams)
  - 2 parts: multiple choice (70pts) and 2 short essay questions (30pts)
  - 6-day access to each Exam
  - Timed at 60 minutes per Exam
- **Final Exam**
  - 3 parts: comprehensive multiple choice (50pts), comprehensive short essay questions (30pts), multiple choice covering last section of course (70pts)
  - Timed at 70 minutes for comprehensive section, 60 minutes for the rest

## **Grading:**

Grades will be assigned using the standard grading scale for the Department of Biology, as follows:

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%		

**Course Points:**

2 Regular Exams * (100 pts each)	200 pts
1 Final Exam ** (150 pts)	150 pts
5 Online quizzes*** (10 pts each)	50 pts
5 Writing Assignments (10pts each)	50 pts
Total	450 pts

\*Regular Exams will cover topics from indicated lectures

\*\*Final Exam is a partially comprehensive exam and will cover topics from throughout the semester.

\*\*\* Optional quiz at the end of the semester can be taken to replace the score of your lowest scoring quiz

**Expectations from students:**

- As students enrolled in this class, it is your responsibility to log in to Canvas every week and keep up with all weekly course materials. Seek help when you need it, and do not wait till the last moment to do this.
- You must log on to Canvas at least weekly and keep up with the course. Make sure that you keep up with the Announcements and stay informed about what is happening and going to happen in class.
- It is your full responsibility to complete exams and quizzes within the time that they are available, and to submit assignments by the given deadlines. **Make-ups or extensions on quizzes, exams and assignments, will NOT be an option. In the highly exceptional situation that an extension is provided, I will require documentation of a legitimate excuse (fully up to my discretion)**
- All quizzes and exams (except the final) will be available from noon Tuesday – noon Monday (Central Time). You MUST do your quizzes and Exams within the given time frame. Once a quiz or exam is closed, it will remain closed. Therefore, please plan ahead to make sure that you get your quiz or exam completed in time.
- 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 absolutely your full responsibility to ensure that you can meet the time requirements and any deadlines associated with this class.
- 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.

### **Course Policies:**

- **Policy on plagiarism:** Anyone caught plagiarizing any exercise 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.
- **Policy on incomplete:** All students are expected to progress through the requirements for this course in a timely fashion. Incompletes will only be considered if circumstances are extenuating and beyond your control, and will require documentation.
- **Extensions or rescheduling** of Exams and quizzes will NOT be possible unless circumstances are exceptional – a legitimate excuse (based on my discretion) with provided documentation will be required for such considerations
- **Assignments, quizzes, exams will receive zero (0) points if they are not completed within the given due dates**

### **Students with Disabilities or Students Who are Pregnant**

It is the policy of the University of Nebraska at Kearney to provide flexible, individualized, and reasonable accommodations to students with documented disabilities or students who are pregnant. To receive accommodation services for a disability, students must be registered with UNK Disabilities Services. Contact David Brandt, in the Academic Success Office, 163 Memorial Student Affairs Building, 308-865-8214 or by email [brandtdl@unk.edu](mailto:brandtdl@unk.edu) to register. For students needing accommodation due to pregnancy, you need to contact Student Health. (The following link provides information for students and faculty regarding pregnancy rights. <http://www.nwlc.org/resource/pregnant-and-parenting-students-rights-faqs-college-and-graduate-students>). Students with disabilities or students who are pregnant need to provide the proper documentation from Disability Services or Student Health to their faculty members in order to receive academic accommodations. Anyone who feels they were not afforded these rights, should contact the campus Title IX/ADA Officer at 308-865-8655. Attached is the link to the above statement for your convenience. <http://www.unk.edu/offices/disabilityservices.aspx?id=13673>

### **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) 308-627-4811  
Title IX Coordinator 308-865-8655

**TENTATIVE COURSE SCHEDULE:**

<b>TOPIC</b>	<b>Assignment/Quiz /EXAM</b>	<b>Reading</b>	<b>Week</b>
Introduction to Cancer Biology	Introduction post & Writing Assignment #1 (Due: 16 Jan)	Chapter 1 & Chapter 2	1 (8 Jan)
Tumor Viruses	Quiz #1 (16 Jan-22 Jan)	Chapter 3	2 (15 Jan)
Cellular Oncogenes	Writing Assignment #2 (Due: 29 Jan)	Chapter 4	3 (22 Jan)
Growth Factors and Receptors	Quiz # 2 (30 Jan-5 Feb)	Chapter 5	4 (29 Jan)
Cytoplasmic Signaling	No exam/quiz/assignment	Chapter 6	5 (5 Feb)
Tumor Suppressors	<b>EXAM I – Wk 1-5 topics (13-19 Feb)</b>	Chapter 7	6 (12 Feb)
Cell Cycle Clock	Writing Assignment #3 (Due: 26 Feb)	Chapter 8	7 (19 Feb)
Apoptosis	Quiz #3 (27 Feb-5 Mar)	Chapter 9	8 (26 Feb)
Eternal Life	Writing Assignment #4 (Due: 12 Mar)	Chapter 10	9 (5 Mar)
Multi-step tumorigenesis	Quiz #4 (13 Mar-19 Mar)	Chapter 11	10 (12 Mar)
	<b>SPRING BREAK</b>		<b>11 (19 Mar)</b>
Maintenance of Genomic Integrity and Tumor Heterogeneity	<b>EXAM 2 - Wk 5-10 topics (27 Mar-2 Apr)</b>	Chapter 12	12 (26 Mar)
Angiogenesis	Writing Assignment #5 (Due: 9 Apr)	Chapter 13	13 (2 Apr)
Metastasis and Invasion	Quiz # 5 (10 Apr-16 April)	Chapter 14	14 (9 Apr)
Cancer and the Immune System	Optional Quiz (17 Apr-23 Apr)	Chapter 15	15 (16 Apr)
Cancer Prevention & Therapeutics	No assignment/quiz/exam	Chapter 16	16 (23 Apr)
FINALS	<b>FINAL EXAM (PARTLY COMPREHENSIVE)</b>		17 (30 Apr)

BIOL 846

Instructor: Dr. Moghe

All lecture material for each week will be posted every **Monday at noon (CST)**

Quizzes and Exams will be available from **Tuesday noon (CST) till Monday noon (CST)** of the following week.

Final Exam will be available from **Wednesday 8AM (CST) the week before finals till Wednesday 11:59PM (CST) of finals week**