Course Description

The goal of this course is to provide students with the general concepts in cancer biology and a general appreciation of the rapid advances made in this area of biology. The lecture and readings will provide students with an understanding of: 1) how specific cellular processes are altered during cancer initiation and progression, 2) how different cancers are being modeled and 3) how the genetic landscape of human cancers is being deciphered.

Learning Objectives

1. Describe the basic properties of eukaryotic cells and their composition
2. List and describe functions of the major biological molecules
3. Describe the function and structure of cellular organelles
4. Describe DNA replication, repair, and expression
5. Describe protein synthesis, processing and regulation
6. Understand cellular signaling as it relates to specific human diseases
7. Understand organelle function as it relates to specific human diseases

Instructor

Dr. Rachel Hellmann Whitaker
Office Location: TBA
Phone: TBA (Instructor)
308 865 8548 (Biology Department)

Email: rwhitaker80@gmail.com
Office hours: 10-11am Mon, Tue, Thu; and by appointment
Blackboard discussion boards: you may also post general comments/questions/concerns on weekly discussion boards. Please ensure that these questions are general (rather than pertaining to you specifically).

As this is an online course, email or posts on the weekly discussion board are the best ways to contact me. I will respond to emails and discussion board posts within 48 hours.

Course Materials
• **Required Textbook:** The Biology of Cancer, 2nd Edition by Weinberg et al., 2014
• **Technical Requirements:** Full access to a computer and Internet are required for this course.

**Course Structure**

I will have all weekly materials up on Blackboard by Monday, 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.

Each week I will post:
• Video lectures (about an hour of lectures per week). Lectures will each usually be about 15-20 minutes in length.
• Notes/outline corresponding to the lecture videos
• Assigned readings from the textbook or supplemental readings that I will provide you
• Weekly quiz
• Link to the weeks discussion board for questions/concerns/comments
• Possibly occasional short length movies to help understand concepts

**Assessments**

Your progress in class will be assessed by weekly quizzes and 4 Exams.

• **Quizzes**
  - Weekly, 10pts each (total of 9 quizzes)
  - Multiple-choice questions (5-10 questions worth 1-2pts each)
  - 2 attempts allowed, only the score from your final attempt will be recorded
  - 6-day access to each weekly quiz
  - Timed at 10 minutes per quiz

• **Exams**
  - 100pts each (total of 4 Exams)
  - Multiple choice, matching, fill-in the blank, short answer (1-2 sentence answers) questions (~50 questions)
  - 1 attempt only
  - 6-day access to each Exam
  - Timed at 60 minutes per Exam
- The final Exam is partially comprehensive and all other exams will cover topics from indicated lectures (see class schedule)

  * **Grades**
  3 Regular Exams* (100pts each) – 300pts
  1 Final Exam** (100pts) – 100pts
  1 Introduction post – 5pts
  1 Initial writing assignment – 5pts
  9 Quizzes – 90pts

  **TOTAL: 500pts**

  * Regular Exams will cover topics from indicated lectures
  ** Final Exam will be partially comprehensive, i.e. 50% comprehensive, 50% focused on topics from indicated lectures

**Grade Assignment**

Final grades will be assigned using the following grading scale:
All grades are final unless there is a calculation error.

**Expectations from students**

  - As students enrolled in this class it is your responsibility to log in to blackboard 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 Blackboard at least weekly and keep up with the announcements that I post. You will not get an email of all the announcements so you MUST check in to Blackboard and 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. Exams and quizzes are available for 6 days and 2 Quiz attempts are allowed – **with so much flexibility provided to you already, make-up 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 Tuesday
- Monday. You MUST do your quizzes within this time frame. Once the quiz is closed, it will remain closed. Therefore, please plan ahead to make sure that you get your quiz or exam done 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 of this class, and any deadlines.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td>97 - 100%</td>
</tr>
<tr>
<td>A</td>
<td>93 - 96%</td>
</tr>
<tr>
<td>A-</td>
<td>90 - 92%</td>
</tr>
<tr>
<td>B+</td>
<td>88 - 89%</td>
</tr>
<tr>
<td>B</td>
<td>83 - 87%</td>
</tr>
<tr>
<td>B-</td>
<td>80 - 82%</td>
</tr>
<tr>
<td>C+</td>
<td>78 - 79%</td>
</tr>
<tr>
<td>C</td>
<td>73 - 77%</td>
</tr>
<tr>
<td>C-</td>
<td>70 - 72%</td>
</tr>
<tr>
<td>D+</td>
<td>68 - 69%</td>
</tr>
<tr>
<td>D</td>
<td>63 - 67%</td>
</tr>
<tr>
<td>D-</td>
<td>60 - 62%</td>
</tr>
<tr>
<td>F</td>
<td>Below 60%</td>
</tr>
</tbody>
</table>

- 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.

**Class Policies**

  - **Policy on plagiarism:** Anyone caught plagiarizing 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.
  
  - **Policy on incomplete:** To be considered for an incomplete in Biology 830P:
    1. You must submit the reasons you cannot complete the scheduled work. This must include a copy of your class schedule and description of your responsibilities outside the classroom. This should be done in writing and include confirmation from your employer or doctor when appropriate.
    2. You must specify the assignments you have missed and a schedule of plans to complete them.
    3. You must submit a copy of the above information to the Chair of the Department of Biology and the Dean of Natural and Social Sciences.
    4. Upon completion of items 1-3, your request for an incomplete will be considered.

I expect all students to progress through the requirements for Biology 846 in a timely fashion. Unless your circumstance is quite remarkable, do not consider an incomplete.

  - **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 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-rightsfaqs-college-and-graduate-students](http://www.nwlc.org/resource/pregnant-and-parenting-students-rightsfaqs-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](http://www.unk.edu/offices/disabilityservices.aspx?id=13673)

Please keep in mind that accommodations become valid only after I sign relevant paperwork, therefore if you require any accommodations please contact me, and the relevant office as soon as possible.

**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 Class Schedule, BIOL 846, Fall 2016

<table>
<thead>
<tr>
<th>Topic</th>
<th>Assignment/Quiz/Exam</th>
<th>Reading</th>
<th>Week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction, Syllabus</td>
<td>Introduction post and writing assignment (due: Aug 31)</td>
<td>-</td>
<td>1(Aug 22)</td>
</tr>
<tr>
<td>The Biology and Genetics of Cells and Organisms</td>
<td>-</td>
<td>Chapter 1</td>
<td>2 (Aug 29)</td>
</tr>
<tr>
<td>The Nature of Cancer</td>
<td>Quiz 1 (Covers Wk 2 material)</td>
<td>Chapter 2</td>
<td>3 (Sept 6)</td>
</tr>
<tr>
<td>Tumor Viruses</td>
<td>Quiz 2 (Covers Wk 3 material)</td>
<td>Chapter 3</td>
<td>4 (Sept 12)</td>
</tr>
<tr>
<td>Cellular Oncogenes</td>
<td>Exam 1 (Covers Module 1, Wk 2-4 material)</td>
<td>Chapter 4</td>
<td>5 (Sept 19)</td>
</tr>
<tr>
<td>Growth Factors, Receptors and Cancer</td>
<td>Quiz 3 (Covers Wk 5 material)</td>
<td>Chapter 5</td>
<td>6 (Sept 26)</td>
</tr>
<tr>
<td>Cytoplasmic Signaling Circuitry Programs Many of the Traits of Cancer</td>
<td>Quiz 4 (Covers Wk 6 material)</td>
<td>Chapter 6</td>
<td>7 (Oct 3)</td>
</tr>
<tr>
<td>Tumor Suppressor Genes</td>
<td>Quiz 5 (Covers Wk 7 material)</td>
<td>Chapter 7</td>
<td>8 (Oct 10)</td>
</tr>
<tr>
<td>pRb and Control of the Cell Cycle Clock</td>
<td>Exam 2 (Covers Module 2, Wk 5-8 material)</td>
<td>Chapter 8</td>
<td>9 (Oct 19)</td>
</tr>
<tr>
<td>p53 and Apoptosis: Master Guardian Executioner</td>
<td>Quiz 6 (Covers Wk 9 material)</td>
<td>Chapter 9</td>
<td>10 (Oct 24)</td>
</tr>
<tr>
<td>Eternal Life: Cell Immortalization and Tumorigenesis</td>
<td>Quiz 7 (Covers Wk 11 material)</td>
<td>Chapter 10</td>
<td>12 (Oct 31)</td>
</tr>
<tr>
<td>Multi-step tumorigenesis</td>
<td>Exam 3 (Covers Module 3, Wk 9-12 material)</td>
<td>Chapter 11</td>
<td>13 (Nov 7)</td>
</tr>
<tr>
<td>Maintenance of Genomic Integrity and the Development of Cancer</td>
<td>Quiz 8 (Covers Wk 13 material)</td>
<td>Chapter 12</td>
<td>14 (Nov 14)</td>
</tr>
<tr>
<td>Moving Out: Invasion and Metastasis</td>
<td>Quiz 9 (Covers Wk 14 material)</td>
<td>Chapter 14</td>
<td>15 (Nov 28)</td>
</tr>
<tr>
<td>Q &amp; A</td>
<td>Q &amp; A</td>
<td>16 (Dec 5)</td>
<td></td>
</tr>
<tr>
<td>FINALS</td>
<td>FINAL EXAM (Covers all modules, Wk 2-14 material)</td>
<td>17 (Dec 12)</td>
<td></td>
</tr>
</tbody>
</table>

- Quizzes will be available from 12:00pm (CST) on Tuesdays until Monday 12:00pm (CST)
- During Exam weeks, Exams will be available from 12:00pm (CST) on Tuesdays until Monday 12:00pm (CST)
- The final Exam will be available on the 12:00pm (CST) Thursday before finals week till Wednesday 12:00pm (CST) of finals week