

**Stony Brook University**  
Department: Biochemistry & Cell Biology

**BIO 314 Cancer Biology(Online)**

Syllabus and Course Schedule Summer 2 Extended  
June 22<sup>nd</sup>-August 15<sup>th</sup>, 2020

**This course is an 8-week asynchronous online course except for three synchronous online video proctored exams.**

***BIO 314 in the Summer Session 2 extended term is administered entirely online asynchronously except for the three Synchronous online video proctored exams:***

***Exam 1 (Thursday, July 9<sup>th</sup> from 6:30 to 8:15 PM EDT)***  
***Exam 2 (Thursday, July 23<sup>rd</sup> from 6:30 to 8:15 PM EDT)***  
***Exam 3 (Thursday, August 13<sup>th</sup> from 6:30 to 8:15 PM EDT)***

**Important Note:** Every effort will be made to avoid changing the course schedule but the possibility exists that unforeseen events will make syllabus changes necessary. It is your responsibility to check Blackboard for corrections or updates to the syllabus. Any changes will be clearly noted in course announcements or through email.

## **Part 1: Course Information**

### **Instructor Information**

**Course Content Instructor:** Susan Erster, PhD  
**Office:** Life Science Building, Room 316  
**Office Hours:** By Appt. E-mail to schedule: Phone appt. or Zoom Virtual Meeting through Blackboard or Google Meet (headsets recommended)  
**Office Telephone:** 631-632-8562  
**E-mail:** [Susan.Erster@stonybrook.edu](mailto:Susan.Erster@stonybrook.edu)

**Online Course Faculty Administrator:** Joanne Souza, PhD  
**Office:** Life Science Building, Room 378  
**Office Hours:** By Appt. Email to schedule: Phone appt.  
**Office Telephone:** 631-632-8548  
**Email:** [Joanne.Souza@stonybrook.edu](mailto:Joanne.Souza@stonybrook.edu)

### **Course Description**

We will examine the biology of cancer. Emphasis is on molecular and cellular events, such as regulation of gene expression, genome maintenance, cell growth and death, differentiation, cell-cell recognition, signaling, and

homeostasis, that are frequently disrupted in cancer. Recent advances in diagnosis and therapy will also be discussed.

**Prerequisite**

C or higher in BIO 202 (Fundamentals of Molecular and Cellular Biology) or equivalent

**Textbook & Course Materials****Required Text**

- The textbook is "The Biology of Cancer", R.A. Weinberg, Garland Science (1<sup>st</sup> edition 2006 or 2007, or 2<sup>nd</sup> edition 2014). The ISBN Nos. are 978-0-8153-4078-8 or 978-0-8153-4076-1 for 1<sup>st</sup> edition and 978-0-8153-4220-5 and 978-0-8153-4219-9 for 2<sup>nd</sup> edition

**Course Technical Requirements**

- Internet connection (DSL, LAN, or cable connection desirable)
- Access to Blackboard
  - Browsers by Operating System
    - Windows 8, Windows 10  
Internet Explorer 11  
Firefox 31+  
Chrome 36+
    - Windows 7, Vista  
Internet Explorer 11  
Firefox 31+  
Chrome 36+
    - Mac OS X 10.7, 10.8, 10.9, 10.10, 10.11& 10.12  
Safari 6+  
Firefox 31+  
Chrome 36+
- Adobe Acrobat Reader and Quicktime and/or Windows media
- Java: Update to newest version, if prompted

**Course Structure**

This course is delivered entirely online through the Blackboard course management system.

- Go to <http://blackboard.stonybrook.edu>
- Sign in with your Stony Brook University NET ID and Password.

In Blackboard, you will have access to the following:

- Course and lectures learning objectives
- Video lecture sub-modules and animated movies (45 hours total).
- Various primary source academic journal articles in reference to cancer biology.
- Online quizzes- designed to assist you in gaining higher levels of content mastery.
- Asynchronous discussion resources:
  - Discussion board submissions consist of student collaborative brainstorming sessions.
  - You will discuss strategy together about how to approach and potentially solve more difficult, complex questions. Some of these questions, currently, may not necessarily have answers.
  - Students will be mentored in course content and critical thought techniques by the teaching assistants and faculty within the discussion board format.
  - You will be expected to:
    - COLLABORATIVELY discuss strategies, needed relevant concepts, and potential solutions
    - Attempt to scientifically falsify potential solutions and choose the best possible solution with known information.
  - Some assigned problem areas within the understanding and treatment of cancer may not have yet been solved; therefore, critical and innovative thought will be expected.
  - Some discussions will be based on journal articles, some on short videos, etc.
- At the beginning of each week:
  - You will access the lecture folders assigned for the week under your assignments tab on Blackboard. They will include:
    - lecture videos separated into video sub-modules (usually A, B, C, D, etc.)

- textbook readings & movie/animation assets
  - lecture PowerPoints,
  - **graded assignment due dates for the week.**
- BY each due date (2 per week), you will:
    - Read the assigned textbook/journal article reading
    - Watch each assigned lecture module
    - Complete the assigned graded learning asset Equiz on Blackboard for each module.
      - Each has between 5 and 9 questions of varying levels of difficulty beginning at the foundational conceptual/definitional level, then adding detail of understanding and complexity, and lastly applications of content.
      - These quizzes are designed to assist you in learning content while building your skill and critical thought level in answering more complex questions per module of the course.
      - Each correct answer will earn one point toward your learning asset grade. See detailed directions on Blackboard.
  - Each week, several times during the week, you will be expected to contribute to a discussion brain storming session directed toward the solving of a more complex/novel problem via discussion board work/debate. See grading rubric on Blackboard for more information. You are expected to only work on one question of 2-3 questions available but to post continually (more than once) during the week, collaborating with your colleagues and brainstorming until the due date on Sunday.
  - These quizzes and discussion sessions are designed to:
    - assist in your learning and retention of) the material in the course
    - Solve more complex problems such as those on the exams and later standardized preparatory exams (MCAT, DAT, etc)

- Develop collaborative, critical, and innovative thinking skills directed toward unanswered questions in research and medical applications.
- A general discussion board that is ungraded is available where students can ask questions of the faculty and the teaching assistants in any area of the course.
- There are three SYNCHONOUS, video proctored exams, each covering approximately one third of the content. A webcam, microphone, speakers, reliable internet service, and a computer are **required** to take this course.
  1. Exams may only be taken on the days and times given. All exams will be video recorded.
  2. You must have a reliable internet connection, a webcam and microphone for all exams.
  3. Students must show their Stony Brook ID or official picture ID before they begin the exam. The exams are closed book. No cell phones, other electronics including watches are permitted.
  4. Students will be required to download any monitoring software to their computer prior to the exam. They will be asked to show their picture ID, to show their surroundings, and to make the statement that they have no other electronics in view or in hearing distance. They must remain alone for the entire exam.
  5. Violations of academic integrity will include but are not limited to:
    - 1) Covering any portion of your ID or failing to show it clearly in the video
    - 2) Utilizing any electronics other than the computer you are taking the exam on and for the purpose of taking that exam. Utilizing any notes, books, etc. or internet sources. Again, exams are closed book.
    - 3) Leaving the room or the seat and out of camera range at any time during the exam.
    - 4) Having others in the room with you.
    - 5) Failure to show your immediate surroundings in the video and if/when asked during the exam.
  6. **Any and all suspicious activity will be turned over to Academic Judiciary and any plagiarism or breaches of academic integrity may result in an F for the course.**

### **Estimated Weekly Time Budget:**

Video lecture hours: approx. 6 most weeks

Textbook : 2

Quiz hours : 2

Discussion hours : 2

If you need technical assistance at any time during the course or to report a

problem with Blackboard you can:

- Visit the Stony Brook University [Student Help Desk Page](#)
- Phone: (631) 632-9602
- E-Mail: [helpme@stonybrook.edu](mailto:helpme@stonybrook.edu)
- Live Chat: [Chat Live with the TLT Student Help Desk!](#)

**Contact the University Service Desk at (631) 632-9602**

**Important Note:** This syllabus, along with course assignments and due dates, are subject to change. It is the student's responsibility to check Blackboard for corrections or updates to the syllabus. Any changes will be clearly noted in course announcement and/or through Blackboard email.

## Part 2: Course Learning Objectives

The course is designed to introduce students with a strong background and interest in biology to the current understanding of the molecular basis of cancer. Emphasis will be placed on the methodologies and approaches of ongoing research efforts, so that students will be more prepared to read research papers published in scientific journals.

**The Nature of Cancer:** Be able to define cancer and describe the ways in which cancer has been classified by the scientific community. Recognize the cells they originate from, and identify the gradations between normal and cancer cells.

**Tumor Viruses:** Recognize and be able to describe and discuss the mechanisms of transforming viruses.

**Cellular Oncogenes:** Explain how cellular oncogenes were identified, and indicate how the structural and regulatory alterations of cellular genes can contribute to cancer.

**Signal Transduction:** Recall the evolution and necessity of cell-cell communication, the mechanisms of G protein and receptor tyrosine kinase signaling. Describe how defects in these proliferative signaling pathways explain the uncontrolled growth seen in cancer cells.

**Tumor Suppressor Genes:** Define and explain the phenomenon of gene "loss" in cancer, and the mechanism of action of tumor suppressor genes NF-1, APC, and VHL.

**Cell growth:** Indicate how progression through the proliferative cycle of DNA replication and cell division is regulated in normal cells. Illustrate how the loss of tumor suppressor protein pRb contributes to tumorigenesis.

**Cell death:** Indicate how the tumor suppressor protein p53 preserves genome integrity by promoting cell cycle arrest, DNA repair, and programmed cell death in cells that have sustained genome damage. Determine the consequences of p53 "loss" in cancer cells.

**Cell Immortalization:** Distinguish the mechanisms that cause normal cells to eventually stop dividing and examine how cancer cells evade these mechanisms to become "immortal".

**Multi-step Tumorigenesis:** Define and describe the six hallmarks of cancer cells, the minimal set of genetic modifications that are required to transform normal cells, and the initiator/promoter model of tumorigenesis.

**Maintenance of Genomic Integrity:** Identify and describe the mechanisms that can introduce mistakes into DNA, the repair pathways that deal with the damage, and the consequences if they are not repaired.

**Heterotypic Interactions:** Describe and examine the interactions between cancer cells and normal cells that enable angiogenesis, invasion and metastasis, and the suppression of the anti-tumor immune response.

**The Rational Treatment of Cancer, special topics in cancer research:** Be able to define and describe the conventional therapies: surgery, radiation, and the classes of chemotherapy, and the mechanisms that result in resistance. Evaluate the dietary and lifestyle choices that are believed to promote cancer, and those that are believed to prevent cancer. Describe and be able to discuss the process of drug discovery and evaluate and appraise some of the promising novel targeted therapies. Hypothesize and argue present evidence and reasoning.

You will meet the objectives and learning outcomes listed above through a combination of the following activities in this course:

- Watch assigned lecture module videos and movie assets
- Review the comparable content in the textbook or journal articles assigned.
- Complete graded learning assets quizzes per module
- Participate in all the discussion board sessions per module
- Complete the three video proctored exams.

## Part 3: Grading Policy

### Graded Course Activities

Visit the **Assignments** link in Blackboard for details about each weekly assignment and the due dates.

| Percent of Final Grade | Description  |
|------------------------|--|
| 25 %                   | Approx. 69 content quizzes & 8 extensive and comprehensive discussion assignment due<br>Quiz 0 – Exam information quiz |
| 25 %                   | Exam 1   |
| 25 %                   | Exam 2   |
| 25 %                   | Exam 3   |
| 100%                   |  |

**Late Work Policy**

Pay close attention to deadlines—there will be no make-up quizzes, discussions, or exams accepted without documentation of serious and compelling issues submitted within ONE WEEK OF THE MISSED ASSIGNMENT or EXAM.

**Viewing Grades in Blackboard**

Points you receive for graded activities will be posted to the Blackboard Grade Book. Click on the My Grades link on the left navigation to view your grades.

We will update the online grades each time a grading session has been complete—typically within 5 days following the completion of an activity. You will see an announcement on Blackboard when grades are available.

**Letter Grade Assignment**

Final letter grades assigned for this course will be based on the percentage of total points earned and may be assigned as follows\*:

| Letter Grade        | Percentage | Performance                               |
|---------------------|------------|---|
| A Range (A- thru A) | 88 and up  | Nearly Excellent/Excellent Work           |
| B Range (B-, B, B+) | 75-87%     | Mostly good work/good work/very good work |
| C Range (C and C+)  | 58 - 74%   | Acceptable Work/marginally good work      |
| D                   | 50-57%     | Poor Work                                 |
| F                   | Below 50%  | Failing Work                              |

\*NOTE: These letter grades are threshold scores only. Actual final scores needed to earn a certain letter grade may be lowered if warranted based on the difficulty of the exams. In other words, if your final total points in the course equal a 88%, you will not earn less than an A-.

**Part 4: Course Policies****Participation**

Students are expected to participate and submit, by the published due dates, all online activities as listed in the weekly assignments. Your participation in the discussions is also required by the due dates noted in the assignments. Faculty will clarify all discussions to help you clear up any confusion before

exams.

All discussion post submissions are monitored for plagiarism through Safe Assign. All cases of possible plagiarism, including cheating on exams, or other violations of academic integrity will be reported to Academic Judiciary and if found guilty, will result in an F in the course. Please be sure all work is in your own words and properly referenced with internal citations and full references. The discussion board grading rubric showing grading criteria is available on Blackboard.

### **Build Rapport**

If you find that you have any trouble keeping up with assignments or other aspects of the course, make sure you let your instructor know as early as possible. Communication channels include:

Email, telephone, and General Discussion Board comments/questions

Building rapport and effective relationships are key to becoming an effective professional. Reach out to “talk science” with your instructors and teaching assistants for better understanding.

Make sure that you are proactive in informing your instructor when difficulties arise during the semester so that we can help you find a solution including potentially dropping the course.

### **Complete Assignments**

**All learning assignments for this course will be submitted electronically through Blackboard and dated according to the date/time submitted as shown on Blackboard.**

Assignments must be submitted by the given deadline. Extensions will not be given beyond the next assignment except under extreme, documented circumstances.

### **Understand When You May Drop This Course**

It is the student’s responsibility to understand when they need to consider dropping from a course. Students are expected to finalize their class schedules by the end of the “Add/Drop” period on the academic calendar.

The Add/Drop period is shorter during the Summer and Winter Sessions, so always consult the Academic Calendar for the official deadline.

Failure to finalize your course registration by the end of the Add/Drop period may have significant consequences; therefore, you should always consult with your Undergraduate College Advisor prior to the Add/Drop deadline if you are having trouble completing your schedule.

See the Academic Advising website for more information at <https://you.stonybrook.edu/firstyear/chapter-ten-academic-advising/>

### **Incomplete Policy**

Under emergency/special circumstances, students may petition for an incomplete grade. Circumstances must be documented and significant enough to merit an Incomplete. All incomplete course assignments must be completed within the timeframe mandated by the University, usually before the beginning of the following semester. Inform your instructor of any accommodations needed.

**Withdrawals from Classes:** The academic calendar, published in the Undergraduate Class Schedule, lists various dates that students must follow. Only the Arts and Sciences Committee on Academic Standing and Appeals or the Engineering and Applied Sciences Committee on Academic Standing may grant permission for a student to withdraw from a course after the deadline. The same is true of withdrawals that will result in an academic under-load. A note from the instructor is not sufficient to secure a withdrawal from a course in the above circumstances.

### **Student Accessibility Support Center Statement**

If you have a physical, psychological, medical or learning disability that may impact your course work, please contact Student Accessibility Support Center, ECC (Educational Communications Center) Building, Room 128, (631)632-6748. They will determine with you what accommodations, if any, are necessary and appropriate. All information and documentation is confidential.

<https://www.stonybrook.edu/commcms/studentaffairs/sasc/facstaff/syllabus.php>

Students who require assistance during emergency evacuation are encouraged to discuss their needs with their professors and Student Accessibility Support Center. For procedures and information go to the following website: <https://ehs.stonybrook.edu/programs/fire-safety/emergency-evacuation/evacuation-guide-people-physical-disabilities>

### **Critical Incident Management**

Stony Brook University expects students to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of University Community Standards any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, or inhibits students' ability to learn. Faculty in the HSC Schools and the School of Medicine are required to follow their school-specific procedures. Further information about most academic matters can be found in the Undergraduate Bulletin, the Undergraduate Class Schedule, and the Faculty-Employee Handbook.

**Academic Integrity/Honesty Statement**

Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. Faculty is required to report any suspected instances of academic dishonesty to the Academic Judiciary. Faculty in the Health Sciences Center (School of Health Technology & Management, Nursing, Social Welfare, Dental Medicine) and School of Medicine are required to follow their school-specific procedures. For more comprehensive information on academic integrity, including categories of academic dishonesty please refer to the academic judiciary website at: [http://www.stonybrook.edu/commcms/academic\\_integrity/index.html](http://www.stonybrook.edu/commcms/academic_integrity/index.html)

The Biochemistry Department at Stony Brook University takes seriously our responsibility to give students an accurate and fair evaluation of their performance in the course. We therefore have a zero tolerance policy towards cheating. Anyone caught cheating in any way will be reported to the Academic Judiciary Committee and, if found guilty, given an F for the course.

**Important Note for Discussions:** Any form of academic dishonesty, including cheating and plagiarism, will be reported to the Academic Judiciary. All discussion posts, including debate material will be submitted to Safe Assign and all suspected cases of any type of plagiarism will be reported to Academic Judiciary with the penalty for a guilty verdict being an F in the course.

**IMPORTANT NOTE FOR Exams:**

Exams may only be taken on the days and times given. All exams will be video recorded.

You must have a reliable internet connection, a webcam and microphone for all exams.

Students must show their Stony Brook ID or official picture ID before they begin the exam. The exams are closed book. No cell phones, other electronics including watches are permitted.

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Violations of academic integrity will include but are not limited to:

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- 2) Utilizing any electronics other than the computer you are taking the exam on and for the purpose of taking that exam. Utilizing any notes, books, etc. or internet sources. Again, exams are closed book.

- 3) Leaving the room or the seat and out of camera range at any time during the exam.
- 4) Having others in the room with you.
- 5) Failure to show your immediate surroundings in the video and if/when asked during the exam.

### **Blackboard Announcements/Email Policies**

The principal way we will officially communicate with you for this course is through the Blackboard Announcement system and your official Stony Brook email account. It is your responsibility to make sure you receive and read your email in your official University email account. For most students that is Google Apps for Education (<http://www.stonybrook.edu/mycloud>)

If you need technical assistance please contact Client Support at (631) 632-9800 or [supportteam@stonybrook.edu](mailto:supportteam@stonybrook.edu)

**Course policies are subject to change.** It is the student's responsibility to check Blackboard for corrections or updates to the syllabus. Any changes will be posted in Blackboard.

| Week #                 | Lect # | Lecture Name                                    | Text Reading                  | Lecture Video Modules  | Quiz & Discussion   | Due Date   |
|------------------------|--------|---|-------------------------------|--|---|--|
| <b>Week 1<br/>6/22</b> | 0      | Orientation, Academic Integrity, Exam Info quiz | Syllabus & Course Information | Orientation & Academic Integrity Videos                                    | Quiz 0<br><i>Disc. Post 1 Introduction</i>  | <b>Thurs.<br/>June 25<sup>th</sup><br/>11:59 PM</b>  |
|                        | 1      | The Nature of Cancer Tumor Viruses 1 & 2        | Chapters 2 & 3                | Module 1A<br>Module 1B<br>Module 1C  | Quiz 1A<br>Quiz 1B/C  | <b>Thurs.<br/>June 25<sup>th</sup><br/>11:59 PM</b>  |
|                        | 2      | The Nature of Cancer Tumor Viruses 3            | Chapters 2 & 3                | Module 2A<br>Module 2B<br>Module 2C  | Quiz 2A<br>Quiz 2B<br>Quiz 2C   | <b>Sunday<br/>June 28<sup>th</sup><br/>11:59 PM</b>  |
|                        | 3      | Cellular Oncogenes                              | Chapter 4                     | Module 3A<br>Module 3B<br>Module 3C<br>Module 3D                           | Quiz 3A<br>Quiz 3B<br>Quiz 3C<br>Quiz 3D<br><i>Discussion 2: Nature of Cancer/Tumor Viruses</i> | <b>Sunday<br/>June 28<sup>th</sup><br/>11:59 PM</b>  |
| <b>Week 2<br/>6/29</b> | 4      | Growth Factors & Their Receptors                | Chapter 5                     | Module 4A<br>Module 4B<br>Module 4C<br>Module 4D<br>Module 4E<br>Module 4F | Quiz 4A/4B<br>Quiz 4C<br>Quiz 4D/4E<br>Quiz 4F  | <b>Thursday<br/>July 2<sup>nd</sup><br/>11:59 PM</b> |

| Week #                 | Lect # | Lecture Name                                    | Text Reading | Lecture Video Modules   | Quiz & Discussion   | Due Date  |
|------------------------|--------|---|--------------|---|---|---|
|                        | 5      | Cytoplasmic Signaling                           | Chapter 6    | Module 5A<br>Module 5B<br>Module 5C<br>Module 5D<br>Module 5E<br>Module 5F              | Quiz 5A<br>Quiz 5B<br>Quiz 5C<br>Quiz 5D<br>Quiz 5E<br>Quiz 5F<br><i>Discussion 3<br/>Growth Factors or<br/>Cytoplasmic</i> | <b>Sunday<br/>July 5<sup>th</sup><br/>11:59 PM</b>    |
| <b>Week 3<br/>7/6</b>  |        | <b>Exam 1</b> Thursday,<br>July 9 <sup>th</sup> |              | <b>Chapters 2-6<br/>Lectures 1-5</b>  | <b>6:30 – 8:15 PM</b>   |   |
|                        | 6      | Tumor Suppressor Genes                          | Chapter 7    | Module 6A<br>Module 6B<br>Module 6C<br>Module 6D<br>Module 6E<br>Module 6F              | Quiz 6A<br>Quiz 6B<br>Quiz 6C<br>Quiz 6D/E<br>Quiz 6F   | <b>Sunday<br/>July 12<sup>th</sup><br/>11:59 PM</b>   |
|                        | 7      | pRb & Control of the Cell_Cycle                 | Chapter 8    | Module 7A<br>Module 7B<br>Module 7C<br>Module 7D<br>Module 7E<br>Module 7F              | Quiz 7A<br>Quiz 7B<br>Quiz 7C/D<br>Quiz 7E/F<br><i>Discussion 4 TSG &amp;<br/>PRB</i>                                       | <b>Sunday<br/>July 12<sup>th</sup><br/>11:59 PM</b>   |
| <b>Week 4<br/>7/13</b> | 8      | p53 & Control of Apoptosis                      | Chapter 9    | Module 8A<br>Module 8B<br>Module 8C<br>Module 8D<br>Module 8E<br>Module 8F<br>Module 8G | Quiz 8A<br>Quiz 8B<br>Quiz 8C/D<br>Quiz 8D<br>Quiz 8E/F<br>Quiz 8G  | <b>Thursday<br/>July 16<sup>th</sup><br/>11:59 PM</b> |
|                        | 9      | Telomeres & Cell Immortalization                | Chapter 10   | Module 9A<br>Module 9B<br>Module 9C<br>Module 9D<br>Module 9E                           | Quiz 9A<br>Quiz 9B<br>Quiz 9C<br>Quiz 9D/E<br><i>Discussion 5<br/>P53 &amp; T&amp; C</i>                                    | <b>Sunday<br/>July 19<sup>st</sup><br/>11:59 PM</b>   |
| <b>Week 5<br/>7/20</b> |        | <b>Exam 2</b> Thursday<br>July 23 <sup>rd</sup> |              | <b>Lect. 6-9<br/>Chapters 7-10</b>  | <b>6:30 – 8:15 PM</b>   |   |
|                        | 10     | Tumor Progression 1                             | Chapter 11   | Module 10A<br>Module 10B<br>Module 10C  | Quiz 10A<br>Quiz 10B<br>Quiz 10C  | <b>Sunday,<br/>July 26<sup>th</sup><br/>11:59 PM</b>  |
|                        | 11     | Tumor Progression 2                             | Chapter 11   | Module 11A<br>Module 11B<br>Module 11C<br>Module 11D<br>Module 11E                      | Quiz 11A/B<br>Quiz 11C/D<br>Quiz 11E<br><i>Disc 6 TP</i>  | <b>Sunday<br/>July 26<sup>th</sup><br/>11:59 PM</b>   |
| <b>Week 6<br/>7/27</b> | 12     | Genome Integrity 1                              | Chapter 12   | Module 12A<br>Module 12B  | Quiz 12A<br>Quiz 12B  | <b>Thursday<br/>July 30<sup>th</sup></b>              |

| Week #                 | Lect # | Lecture Name                        | Text Reading  | Lecture Video Modules  | Quiz & Discussion   | Due Date   |
|------------------------|--------|-------------------------------------|---|--|---|--|
|                        |        |                                     |   | Module 12C<br>Module 12D<br>Module 12E                             | Quiz 12C/D<br>Quiz 12E                                      | <b>11:59 PM</b>  |
|                        | 13     | Genomic Integrity 2                 | Chapter 12  | Module 13A<br>Module 13B<br>Module 13C<br>Module 13D<br>Module 13E | Quiz 13A<br>Quiz 13B<br>Quiz 13C<br>Quiz 13D/E              | <b>Thursday<br/>July 30th<br/>11:59 PM</b>               |
|                        | 14     | Angiogenesis, Invasion & Metastasis | Chapter 13<br>Chapter 14                                    | Module 14A<br>Module 14B<br>Module 14C<br>Module 14D               | Quiz 14A<br>Quiz 14B<br>Quiz 14C<br>Quiz 14D                | <b>Sunday<br/>Aug 2nd<br/>11:59 PM</b>                   |
|                        | 15     | Rational Treatment of Cancer 1      | Chapter 16  | Module 15A<br>Module 15B<br>Module 15C<br>Module 15D               | Quiz 15A<br>Quiz 15B<br>Quiz 15C<br>Quiz 15D                | <b>Sunday<br/>Aug 2<sup>nd</sup><br/>11:59 PM</b>        |
|                        | 16     | Rational Treatment of Cancer 2      | Chapter 16  | Module 16A<br>Module 16B<br>Module 16C                             | Quiz 16A/B<br>Quiz 16C<br><i>Discussion 7 A/IM/II</i>       | <b>Sunday<br/>Aug 2<sup>nd</sup><br/>11:59 PM</b>        |
| <b>Week 7<br/>8/3</b>  | 17     | Rational Treatment of Cancer 3      | Chapter 16  | Module 17A<br>Module 17B<br>Module 17C                             | Quiz 17A/B<br>Quiz 17C                                      | <b>Thursday<br/>Aug 6<sup>th</sup><br/>11:59 PM</b>      |
|                        | 18     | Cancer Metabolism                   | Guest Lec.<br>Paul M.<br>Bingham,<br>PhD                    | Module 18A<br>Module 18B<br>Module 18C                             | Quiz 18A<br>Quiz 18B<br>Quiz 18C<br><i>Discussion 8 RTC</i> | <b>Sunday<br/>August<br/>9<sup>th</sup><br/>11:59 PM</b> |
|                        | 19     | Cancer Immunotherapy                | Guest Lect.<br>Anthony<br>Antonelli<br>Susan Erster,<br>PhD | Module 19A<br>Module 19B   | Quiz 19A<br>Quiz 19B  | <b>Sunday<br/>August<br/>9<sup>th</sup><br/>11:59 PM</b> |
| <b>Week 8<br/>8/10</b> |        | <b>Exam 3 Thursday Aug. 13th</b>    |   | <b>Chapt. 11-16<br/>Lect. 10-19</b>                                | 6:30-8:15 PM  |  |

**Student Resources:**

- **Academic and Transfer Advising Services:** Have questions about choosing the right course? Contact an advisor today. Phone: (631) 632-7082 (option 2); email: [advising@stonybrook.edu](mailto:advising@stonybrook.edu); website: <http://www.stonybrook.edu/commcms/advising/>
- **Bursar:** For help with billing and payment. Phone: (631) 632-9316; email: [bursar@stonybrook.edu](mailto:bursar@stonybrook.edu); website: <http://www.stonybrook.edu/bursar/>
- **Career Center** The Career Center's mission is to support the academic mission of Stony Brook University by educating students about the career decision-making process, helping them plan and attain their career goals, and assisting with their smooth transition to the workplace or further education. Phone: (631) 632-6810; email: [sbucareercenter@stonybrook.edu](mailto:sbucareercenter@stonybrook.edu); Website: <http://www.stonybrook.edu/career-center/>
- **Counseling and Psychological Services:** CAPS staff are available by phone, day or night. <http://studentaffairs.stonybrook.edu/caps/>

- **Disability Support Services:** Students in need of special accommodations should contact DSS. Phone: (631) 632-6748; email: [dss@stonybrook.edu](mailto:dss@stonybrook.edu); <http://www.stonybrook.edu/commcms/studentaffairs/dss/>
- **Library:** Access to online databases, electronic journals, eBooks, and more!
  - **Library Instruction Website -** <http://library.stonybrook.edu/workshops-this-week-citation-skills-worldcat-and-endnote-the-hsc/>
  - **SBU Library Research Guides and Tutorials** <http://library.stonybrook.edu/research/research-basics/>
- **Registrar:** Having a registration issue? Let them know. Phone: (631) 632-6175; email: [registrar\\_office@stonybrook.edu](mailto:registrar_office@stonybrook.edu); <http://www.stonybrook.edu/commcms/registrar/>
- **Writing Center:** Students are able to schedule face-to-face and online appointments. <https://www.stonybrook.edu/writingcenter/>
- **Support for Online Learning** <http://www.stonybrook.edu/commcms/onlineed/student.html>
- **Ombuds Office** The Stony Brook University Ombuds Office provides an alternative channel for confidential, impartial, independent and informal dispute resolution services for the entire University community. We provide a safe place to voice your concerns and explore options for productive conflict management and resolution. The Ombuds Office is a source of confidential advice and information about University policies and procedures and helps individuals and groups address university-related conflicts and concerns. <http://www.stonybrook.edu/ombuds/>