

SYLLABUS
BISC 499, Cancer Immunology
13499 Spring 2016
Raffaella Ghittoni, Ph.D.

Brief Description

Course: **Cancer Immunology (BISC 499)** is a 4 unit course
Textbook: *Robert Weinberg. **The Biology of Cancer (1e). Garland Science***
Lecture hours: Wednesday and Friday: 2:00 pm – 3:40 pm
Location: Room **VKC 111**
Instructor: Raffaella Ghittoni, Ph.D.
Office: ZHS-256
Telephone: 213-740-8352
Email: rghitton@usc.edu
Office hours: Wed and Fri 4-5 pm
Final Exam: Monday May 9th

Prerequisites

Biology/Biochemistry majors, or graduate students enrolled in biological sciences.
Permission of instructor. Registration is limited to 20 students
Familiarity with Molecular Biology, Genetics, Principles of Immunology is assumed.

Course Goals and Learning Objectives:

Cancer immunology is a branch of immunology that studies interactions between the immune system and cancer cells (also called tumors or malignancies). In this course students will have the possibility to acquire knowledge on the main current topics related to the human immune system and cellular transformation and carcinogenesis. After an introductory section on terminology and general aspects on cellular transformation, the course will mainly focus on key aspects in the interplay between the immune response and the establishment of malignancies as risk factors in carcinogenesis with an in depth on pathogen related factors, the impact of tumor affecting directly the immune system, the fundamental role of immune cells surveillance, cytokines and inflammation in carcinogenesis.

Cancer immunology is a growing field of research that aims to discover innovative cancer immunotherapies to treat and retard progression of the disease. At the end of the semester currently adopted immunobased therapies and new possible approaches in cancer treatment will be also discussed.

The course is based on suggested textbooks and on current literature (reviews publication).

Seminars: One (or two) class meeting will consist of a research seminar presentation by an invited member who is conducting fundamental or clinical cancer research. This will be followed by a discussion. This will give students the possibility to meet, talk and interact with professionals of this field. Seminars will be scheduled

depending on our guest's availability and research area to coordinate with appropriate class topics.

Students group presentation:

During the semester students will have to organize in groups of two and select a research paper related to the topics discussed in class. Each group will be evaluated for critically presenting the paper in the discussion session and for participating as discussant during other group presentations.

Required Materials.

Text: *The Biology of Cancer (2e) by Robert Weinberg, Garland Science*

Literature Readings: Articles related to each topic will be uploaded in pdf format on Blackboard website during the semester.

Additional suggested text:

Online Course Materials: Supplemental course materials and announcements will be posted on the Blackboard website.

Your USC e-mail username and password will allow you to access the secure site: <https://blackboard.usc.edu> (if you have trouble with Blackboard, please contact blackboard@usc.edu)

Students are responsible for checking additional postings and announcements on Blackboard website **on a weekly basis**.

Exam dates are **firm**.

E-mails: Course E-mails will be sent only to your official USC email address

Course grading distribution

Midterm I	25%
Midterm II	25%
Presentation	25%
Final exam	25%

Grade determination and final examination details

Tests and final exams are marked on a numerical basis and then converted to letter grades. All scores are posted in your GRADEBOOK unless noted. If you notice a mistake or missing score(s) in the gradebook, it is student's responsibility to notify the course instructor as soon as possible.

Course Policies:

1) Exam dates are firm. There are no makeup exams in the course. Performance on the final may be prorated to substitute for a missing midterm exam, if an excuse considered valid by faculty is presented in a timely fashion. An acceptable written excuse or documentation must be provided to the faculty. The final exam will be administered only

on the date and time set by the University.

2) Midterm exams will be returned to students by the professor during lectures. The final examination **will not be returned** but will be retained for one semester by the faculty.

3) Regrades: If you think an answer you have provided was graded incorrectly or if there is an arithmetic error, you may seek a regrade. You must provide a written explanation of why you think your answer was graded incorrectly. Regrade requests are to be submitted to your instructor. If a regrade is agreed upon, then the ENTIRE EXAMINATION may be subject to a regrade. Your grade may therefore go up, go down, or remain the same. Regrade requests must be received within one week of when the exam key is posted for midterms, or by the second week of classes the following semester for the final exam.

4) No special assignments for extra credit are permitted.

5) Academic integrity policies of the University will be strictly followed. Infractions can result in severe penalties. There may be assigned seating for exams. No student may be admitted to an exam after the first student has left the exam.

7) It may be necessary to make adjustments to the syllabus during the semester. Check the course website or class announcements on Blackboard for updates. **Exam dates will not be changed.**

8) Any questions or concerns regarding these policies should be addressed to the faculty.

9) **Statement on Academic Conduct and Support Systems**

All USC students are responsible for reading and following the Student Conduct Code, which appears in the SCampus and at <https://scampus.usc.edu/university-student-conduct-code/>. This policy does not apply to discussion or exchange of ideas. On the contrary, such interactions represent an important way to clear programming hurdles.

Academic Conduct

Plagiarism – presenting someone else’s ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in *SCampus* in Section 11, Behavior Violating University Standards <https://scampus.usc.edu/1100-behavior-violating-university-standards-and-appropriate-sanctions/>. Other forms of academic dishonesty are equally unacceptable. See additional information in *SCampus* and university policies on scientific misconduct, <http://policy.usc.edu/scientific-misconduct/>.

Discrimination, sexual assault, and harassment are not tolerated by the university. You are encouraged to report any incidents to the *Office of Equity*

and Diversity <http://equity.usc.edu/> or to the Department of Public Safety <http://capsnet.usc.edu/department/department-public-safety/online-forms/contact-us>. This is important for the safety whole USC community. Another member of the university community – such as a friend, classmate, advisor, or faculty member – can help initiate the report, or can initiate the report on behalf of another person. *The Center for Women and Men* <http://www.usc.edu/student-affairs/cwm/> provides 24/7 confidential support, and the sexual assault resource center webpage sarc@usc.edu describes reporting options and other resources.

Support Systems

A number of USC's schools provide support for students who need help with scholarly writing. Check with your advisor or program staff to find out more. Students whose primary language is not English should check with the *American Language Institute* <http://dornsife.usc.edu/ali>, which sponsors courses and workshops specifically for international graduate students. *The Office of Disability Services and Programs* http://sait.usc.edu/academicsupport/centerprograms/dsp/home_index.html provides certification for students with disabilities and helps arrange the relevant accommodations. If an officially declared emergency makes travel to campus infeasible, *USC Emergency Information* <http://emergency.usc.edu/> will provide safety and other updates, including ways in which instruction will be continued by means of blackboard, teleconferencing, and other technology.

BISC 499 - Lectures and Exams Schedule - Spring 2016

	Topics Covered	
Jan 13	CANCER AND THE IMMUNE SYSTEM – Course introduction	
Jan 15	The biology and genetics of cells and organisms (part I)	Ch.1.5 /12.9
Jan 20	The biology and genetics of cells and organisms (part II)	Ch.1
Jan 22	The Nature of Cancer - Terminology and common types of cancer (part I)	Ch.2
Jan 27	The Nature of Cancer - Terminology and common types of cancer (part II)	Ch.2
Jan 29	The Nature of Cancer - Terminology and common types of cancer (part III)	Ch.2
Feb 3	Tumor virus (part I)	Ch.3
Feb 5	Guest Lecture: Dr. Nancy Castro, PhD – Biological Sciences, USC - Breast cancer in depth.	Slides
Feb 10	Tumor virus (part II)	Ch.3
Feb 12	MIDTERM I	
Feb 17	Tumor viruses (part III) Human Papilloma Virus and carcinogenesis	Review assigned
Feb 19	Oncogenes/Tumor suppressor genes	Ch.9 + Ch 11
Feb 24	Human Immune system	Ch 15
Feb 26	Inflammation and cancer -part I	Ch.11
Mar 2	Inflammation and cancer part II - Obesity	Ch.9
Mar 4	Guest Lecture: Stefano di Biase, PhD - Gerontology Department, USC - Fasting and Immunosurveillance.	Slides ppt
Mar 9	Immunosurveillance part I	Ch 15
Mar 11	Students presentation	Selected Article
Mar 16	Spring recess	
Mar 18	Spring recess	
Mar 23	Immunosurveillance part II	Ch. 15
Mar 25	Students presentation	Selected article
Mar 30	Midterm II	
April 1	Tumor antigens I	Ch.15
Apr 6	Tumor antigens II	Ch. 15
Apr 8	Guest Lecture: Dr Nakul Datta, MD -Department of Surgery, UCLA – Liver transplant	Slides ppt
Apr 13	Immunosurveillance evasion I	Ch.15
Apr 15	Students presentation	Selected article
Apr 20	Immunosurveillance evasion II	Ch.15
Apr 22	Antibodies and Cell-Based immunotherapy – Vaccines	Ch.15
Apr 27	Students presentation	Selected articles
Apr 29	Students presentation	Selected articles
May 9	Final Examination 2.00 - 4.00 pm	