
BIOLOGY 261 – Biology of Cancer**MWF 10:00 am – 10:50 am****Physics Building - Room 217**

Instructor Diana E. Jaalouk, PhD

Office Biology 115

Email diana.jaalouk@aub.edu.lb; dj11@aub.edu.lb

AUB phone extension 3878

Office hours Monday 1:30 pm – 2:30 pm

Tuesday 1:30 pm – 2:30 pm

Friday 1:30 pm – 2:30 pm

CATALOGUE ENTRY**BIOL 261 Biology of Cancer 3.0; 3 cr.**

This course compares the basic biology of normal versus the malignant neoplastic state and provides a comprehensive over-view of the basic biology of cancer. *Prerequisite: BIOL 223. Annually.*

COURSE OBJECTIVE

This course is intended to give the students an understanding of the principles of cancer biology by studying the molecular and cellular basis of cancer within a “conceptual framework”.

LEARNING OUTCOMES

By the end of the course, students should be able to:

1. Describe how cancer arises and develops at the molecular and cellular level. BIOL BS PLO 4
2. Explain genetic alterations implicated in tumor formation and distinguish alterations in specific genes such oncogenes and tumor suppressor genes. BIOL BS PLO 4a
3. Compare and contrast cell cycle regulatory and cell death mechanisms in normal and tumor cells. BIOL BS PLO 4a
4. Describe how cancer grows and spreads and distinguish between the principles of tumorigenesis, angiogenesis, and metastasis.. BIOL BS PLO 3

RESOURCES AVAILABLE TO STUDENTS

- Required Textbook: Robert A. Weinberg, 2010, The Biology of Cancer – Garland Science.
- Any additional course material including lectures will be made available on the Moodle system at AUB.

TENTATIVE SCHEDULE

Topic	Textbook Ref.	~ Week
Introduction	-	1
The Nature of Cancer	Chapter 2	1-2
Tumor Viruses	Chapter 3	2-3
Cellular Oncogenes	Chapter 4	3-4
Growth Factors, Their Receptors & Cancer	Chapter 5	5-6
Exam I	Chapters 2-5	7
Cytoplasmic Signaling Circuitry Programs: Cancer Traits	Chapter 6	7-9
Tumor Suppressor Genes	Chapter 7	9-10
pRb & Control of the Cell Cycle Clock	Chapter 8	10-11
p53 & Apoptosis: Master Guardian and Executioner	Chapter 9	11-12
Exam II	Chapters 6-9	13
Cell Immortalization, Tumorigenesis, & Cancer Development	Chapters 10-12	13-15
The Biology of Angiogenesis	Chapter 13	15-16
Invasion & Metastasis	Chapter 14	16-17
Final Exam	Material post Exam II + 2 topics from Exam I & Exam II	

COURSE EVALUATION & GRADE DISTRIBUTION

Exam I	25%
Exam II	25%
Drop Quizzes	6%

Class discussion	4%
Final Exam	40% (5%, 5%, 30%)

The Final Exam will be comprised of 3 sections covering select material of Exam I, select material of Exam II, and the course material after Exam II.

COURSE POLICIES

- **Attendance:** You are urged to attend all classes so you do not miss on the material presented in class and in turn the students can benefit from your contribution to class discussions. In case of absence from any class, you are required to cover the material missed and inquire about any announcements made during your absence. IF ATTENDANCE RECORD IS LESS THAN 80% OF LECTURES, YOU MAY BE DROPPED FROM THE COURSE (see AUB catalogue, FAS-Attendance).
- **Exams:** NO MAKE-UP EXAMS. ANY MISSED EXAM WILL BE ADDED TO THE FINAL EXAM. IF YOU MISS BOTH EXAMS (I & II), YOU WILL RECEIVE 0% ON ONE AND THE OTHER ADDED ON TO THE FINAL EXAM.
- **Drop quizzes:** Several drop quizzes will be administered throughout the semester. The total contributions of the drop quizzes would amount up to 6% of your final grade. If you miss any drop quiz without a valid excuse, you will get a zero. Questions of conceptual nature will be attended to in the classroom. They are meant to encourage discussion and enhance your awareness in a specific subtopic in cancer biology. Please note that up to 4% will be given for participation in classroom discussions.
- **Code of conduct:** Students are expected to respect their colleagues' presence in a classroom setting and not to infringe on their rights for acquiring knowledge and for promoting an environment conducive for excellence of instruction (i.e. refrain from side conversations, avoid arriving late to class and avoid use of mobile phones, etc ...)
- **Academic integrity:** Any violation of academic integrity WILL NOT be tolerated and will result in serious repercussions. Please refer to AUB Policies and Procedures on academic integrity. <http://pnp.aub.edu.lb/university/handbook/158010044.html>