



Course Name: “Biology”

Course Coordinator: Professor George Sourvinos, PhD

Course description: The course is designed for Pre-Med or Biological Sciences students or students that require attending Biology course during their studies. The lectures will introduce students to basic biology of the cell and at the second part the students will be introduced to specialized cell types and functions.

Lecture	Chapter	Hours	Instructor
Lecture 1	An introduction to informatics for biomedical data mining	3	Prof. John Iliopoulos
Lecture 2	Review of cell structure and function	3	Prof. Alex Zafiropoulos
Lecture 3	Introduction to Macromolecules. Protein structure and function	3	Prof. George Mavrothalassitis
Lecture 4	DNA structure & Replication control	3	Prof. Charalambos Spilianakis
Lecture 5	Mutations and DNA repair.	3	Prof. George Garinis
Lecture 6	Transcription	3	Prof. Charalambos Spilianakis
Lecture 7	From RNA to protein: Translation control	3	Prof. Charalambos Spilianakis
Lecture 8	Methods and tools for studying genes and their function	3	Prof. Dimitris Kardassis
Test	<i>Midterm Examination</i>		
Lecture 9	Chromosomes and cell division	3	Prof. George Zachos
Lecture 10	Membranes	3	Prof. Domna Karagozeos
Lecture 11	Matrix Biology	3	Prof. Alex Zafiropoulos
Lecture 12	Cell signaling	3	Prof. Christos Tsatsanis
Lecture 13	Control of Cell Cycle and Death	3	Prof. Christos Tsatsanis
Lecture 14	The malignant cell	3	Prof. George Sourvinos
Lecture 15	The neuronal cell	3	Prof. Domna Karagozeos

Lab 1	PBMC isolation, stimulation & staining for FACS		Dr Rena Dermitzaki
Lab 2	Protein electrophoresis & immunoblot		Dr Rena Dermitzaki
Lab 3	Mouse tail DNA extraction & PCR		Dr Rena Dermitzaki
Lab 4	DNA extraction, PCR, DNA digestion & electrophoresis for human samples	3	Dr Rena Dermitzaki
Lab 5	RNA extraction, cDNA preparation & quantitative real time PCR for human samples	3	Dr Rena Dermitzaki
Test	<i>Final Examination</i>		

Required Study Material:

Alberts et al: Essential Cell Biology, Garland Science, ISBN: 978081534129

The course will be taught by:

Aris Eliopoulos, PhD, Professor
Domna Karagogeos, PhD, Professor
Dimitris Kardassis, PhD Professor
George Mavrothalassitis, PhD, Professor
Christos Tsatsanis, PhD, Professor
George Garinis, PhD, Associate Professor
George Zachos, PhD Associate Professor
John Iliopoulos, PhD, Assistant Professor
Alex Zafiropoulos, PhD, Assistant Professor