UNIVERSITÀ DEGLI STUDI DI BARI ALDO MORO

PROF. ANNA GALLONE
Associate Professor of Applied Biology

Bari, October 6th, 2020

Bari English Medical Curriculum (BEMC)
AY 2020-2021

Course
BIOLOGY AND GENETICS
(Cellular Biology and Genetics)

Total credits: 7 (4+3)
Total hours: 84
Scientific Discipline Sector: BIO/13
Exams: written examination method (multiple choice tests).

Course Coordinator: Prof. Anna Gallone
e-mail: anna.gallone@uniba.it
Students will be welcomed by previous appointment *via* e-mail

TOPICS COVERED BY THE COURSE:
Introduction to the study of Cell. Basic Properties of Cells. Two fundamentally different classes of Cells. Viruses. Prions. The chemical basis of life (an overview). Some hints of bioenergetics, enzymes and metabolism. The structure and function of the plasma membrane. Mitochondrial structure and function. Peroxisomes. Chloroplast Structure and Function. Interactions between Cells and their environment. Cytoplasmic membrane systems: structure, function, and membrane trafficking. The cytoskeleton and cell motility. Cell signaling and signal transduction: communication between cells. Techniques in cell.

The nature of the gene and the genome. DNA and the molecular structure of chromosomes. Gene expression: from transcription to translation. The cell nucleus. The control of gene expression. DNA replication and repair. Cellular reproduction; mitosis and meiosis. Cell cycle and its control. The genetic basis of cancer. Oncogenes, Tumor Suppressor Genes. Mendelism: the basic principles of inheritance. Extensions of Mendelism. The chromosomal basis of Mendelism. Variation in chromosome number and structure. Linkage, Crossing Over and chromosome mapping. The Genetics of Bacteria and their Viruses. Mutation, DNA Repair. Transposable Elements: An Overview.

SUGGESTED COURSEBOOKS:
Biology:
- Jeff Hardin - Gregory Paul Bertoni - Lewis J. Kleinsmith: "Becker's World of the Cell"; Pearson Int. Ed. Last edition
or
- Gerald Karp: "Cell and Molecular Biology: Concepts and Experiments"; Wiley Editor. Last edition
Genetics:
- Russell PJ: *i*Genetics. "A molecular Approach" Pearson Int. Ed. Last edition
or
- Snustad DP, Simmons MJ.: "Principles of Genetics" - Wiley Editor. Last edition.

Policlinico, P.zza G.Cesare, 11 - 70124 Bari (Italy)
2nd floor "Nuovo complesso di Scienze Biomediche"
tel (+39) 080 5448553
anna.gallone@uniba.it
www.uniba.it
c.f. 80002170720 p. iva 01086760723