



Dipartimento di Scienze e Tecnologie

ACADEMIC YEAR 2017/2018

PROGRAM

3rd YEAR

DEGREE: BIOTECHNOLOGIES

CLASS: GENERAL PATHOLOGY (6 CFU)

TEACHER: FRANCESCO MARIA PACIFICO

Introduction

- Basics: etiology, pathogenesis, healthy status and disease.

General etiology:

- Chemical, physical and biological causes.

Cellular pathology:

- Mechanisms of cell damage (hypoxia, free radicals, etc.).
- Mechanisms of adaptation.
- Cell death: necrosis and apoptosis.
- Mechanisms of intracellular accumulation.
- Pathology of cell growth.
- Dystrophic and metastatic calcification.

Acute inflammation:

- Signs, symptoms and vascular events.
- Edema, trasudate and exudate.
- Cellular and molecular mediators of inflammation.
- Chemical mediators of inflammation.
- Phagocytosis
- Systemic responses to inflammation.
- Types of acute inflammation.
- Cicatrization, wound healing and fibrosis.

Chronic inflammation:

- Morpho-functional aspects of chronic inflammation.



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Immunology:

- Innate and adaptive immunity.
- Central and peripheral lymphatics. Cells of immune system.
- Antigens. Antibodies: structure and function of immunoglobulins. Antigen-antibody reactions. Dynamics of humoral response.
- Major histocompatibility complex (MHC). Cell-mediated response.
- Tolerance.

Oncology:

- Definition of tumor.
- Cell cycle and its regulation. Growth factors.
- Tumor classification, nomenclature, staging.
- Benign and malignant tumors.
- Tumor initiation, promotion and progression.
- Invasion and metastasis.
- Oncogenes and oncosuppressors.

Textbooks:

G. Pontieri, Patologia generale, Piccin Editore (ultima edizione o ristampa in corso)

AA.VV., Patologia generale, Idelson-Gnocchi Editore (ultima edizione o ristampa in corso)

Robbins e Cotran, Le basi patologiche delle malattie, Piccin Editore (ultima edizione o ristampa in corso)

F. Celotti, Patologia generale e fisiopatologia, Edises (ultima edizione o ristampa in corso)

A. Abbas, Immunologia Cellulare e Molecolare, Piccin Editore (ultima edizione o ristampa in corso)

Janeway's, Immunobiologia, Piccin Editore (ultima edizione o ristampa in corso)

P. Parham, Il sistema immunitario, Edises (ultima edizione o ristampa in corso)