



UNIVERSITÀ  
DEGLI STUDI DI MILANO-BICOCCA

## COURSE SYLLABUS

### Principles of Ocular Pathology

2425-3-E3002Q018

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#### Aims

The course is intended to provide students with fundamental concepts on pathology relevant for their professional field.

#### Contents

GENERAL PATHOLOGY: Homeostasis and disease. Etiology and pathogenesis: disease-causing agents. Inflammation and tissue repair. Oncology.

OCULAR PATHOLOGY: Pathogenic mechanisms of the main ocular pathologies.

#### Detailed program

GENERAL PATHOLOGY:

- Etiology. Pathogenesis. Concept of homeostasis and disease. Onset and course of disease. Acute and chronic diseases. General etiology. Physiological and pathological predisposing factors.
- Causes of disease. Physical causes, chemical causes, biological causes: bacteria, viruses, protozoa, fungi, metazoans. Virulence. Pathogenicity. Transmission of infections. Spread of infectious agents. Pathogenic action.
- Cellular homeostasis disorders. Atrophy, hypertrophy, hyperplasia, metaplasia, dysplasia. Cell injury and death.
- Acute and Chronic Inflammation. Phases of the inflammatory process. Chemical mediators. The cells of inflammation.
- Pathophysiology of thermoregulation. Generalities. Thermogenesis: basal metabolism, regulation of thermogenesis. Termodispersion. Alterations in body temperature. Not fever Hyperthermia. Fever Hyperthermia: pathogenesis, course, types of fever.

•Oncology. Benign and malignant tumors. Invasion and metastasis. Classification of tumors. Oncogenes and tumor suppressor genes. Epidemiology of cancers. Gender differences in cancer susceptibility.

#### OCULAR PATHOLOGY:

- Bulbar and ocular anatomy. Optical pathway anatomy.
- Ocular physiology: single binocular vision, extrinsic and intrinsic ocular motility, eyelid motility, lacrimation physiology, corneal physiology, pupillary reflexes, ocular hydrodynamic physiology, accommodation, vision physiology, epithelial physiology retinal pigment.
- Clinical and instrumental diagnostics. Visual acuity, visual field, main clinical signs, clinical instrumentation, visual acuity examination, visual field examination, biomicroscopy, tonometry, retinal angiography, optical coherence tomography, ultrasound.
- Refraction defects: myopia, hyperopia, astigmatism.
- Acute affections disabling visual function: hemovitreus, occlusion of the central artery and central retinal vein, exudative age-related macular degeneration, rhegmatogenous retinal detachment, anterior ischemic opticopathy, papillitis, retrobulbar neurotropicopathy.
- Chronic affections disabling the visual function: refractive errors, cataracts, open angle glaucoma, atrophic age-related macular degeneration.
- Mainly inflammatory affections: blepharitis, dacryocystitis, conjunctivitis, keratitis, dry eye, iridocyclitis, angle closure glaucoma (acute glaucoma).
- The eye and systemic diseases: diabetic retinopathy, hypertensive retinopathy, ocular immunopathology, papilledema, incomitating strabismus, exophthalmos.
- Ocular pathologies of pediatric interest: amblyopia, concomitant strabismus, leukocoria, congenital glaucoma.
- Ocular traumatology.

### **Prerequisites**

Propedeutic courses.

### **Teaching form**

16 face-to-face lectures of 2 hours in a traditional format.

### **Textbook and teaching resource**

PATOLOGIA GENERALE: Pontieri G.M., Elementi di Patologia per i corsi di Laurea in Professioni Sanitarie, III Edizione, Piccin

All materials shown during lectures will be published in e-learning.

### **Semester**

III year, I Semester

## **Assessment method**

Written examination: thirty multiple-choice questions and one open-ended question on the course topics  
There will not be in itinere examinations.

The questions are aimed at ascertaining the effective acquisition of theoretical knowledge presented during the course.

The evaluation criteria are the followings: the correctness of the answers, the ability to understand the text of the open question, to argue the answer and to synthesize.

Based on the outcome of the written examination, there could be the possibility of an optional oral interview (upon request by professor or student) focused on all the course topics, which can lead to an increase or a decrease on the score of the written exam.

Erasmus students can take the exam in English if they decide on.

## **Office hours**

By appointment (email request)

## **Sustainable Development Goals**

GOOD HEALTH AND WELL-BEING | QUALITY EDUCATION | GENDER EQUALITY

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