

V – VI year

Scientific Field	INTERNAL MEDICINE AND MEDICAL GENETICS	TUTOR	ECTS
MED/09	INTERNAL MEDICINE 1	Sbraccia Paolo	1
MED/09	INTERNAL MEDICINE 1	Federici Massimo	1
MED/09	INTERNAL MEDICINE 1	Di Cola Giovanni	1
MED/09	INTERNAL MEDICINE 1	Leo Roberto	1
MED/03	MEDICAL GENETICS	Biancolella Michela	1
MED/03	MEDICAL GENETICS	Giardina Emiliano	1
MED/03	MEDICAL GENETICS	Borgiani Paola	1
MED/09	INTERNAL MEDICINE 2	Sbraccia Paolo	2
MED/09	INTERNAL MEDICINE 2	D'Adamo Monica	1
MED/50	APPLIED MEDICAL AND TECHNICAL SCIENCES	Leo Roberto	1
MED/50	APPLIED MEDICAL AND TECHNICAL SCIENCES	Di Cola Giovanni	1
MED/06	MEDICAL ONCOLOGY	Roselli Mario	2
MED/06	MEDICAL ONCOLOGY "TARGET THERAPY"	Torino Francesco	1
		TOT	15

SBRACCIA P.
COORDINATOR

SPECIFIC AIMS

Aim of the Internal Medicine Course is to challenge the students on case-based clinical reasoning, and to reinforce the knowledge and application of Clinical Method.

Major Internistic presentations is addressed; emphasis will be placed on the practical application of physiopathologic basis of clinical signs and symptoms, on differential diagnostic reasoning, proceeding from the in-depth analysis to the general synthetic view in order to address the complexity of the clinical scenarios.

A systematic nosographic list displays the core-curriculum of Internal Medicine Course: topics are discussed emphasizing clinical reasoning basis and diagnostic proceedings.

PROGRAM

- DISEASES OF CARDIOVASCULAR SYSTEM:

Hypertension, Atherosclerosis, Arrhythmias, Pulmonary Hypertension, Angina Pectoris, Acute Myocardial Infarction, Cardiogenic Shock, Valvular Diseases, Cardiomyopathies, Pericarditis, Aortic Diseases, Peripheral Vascular Diseases, Pulmonary embolism, Heart Failure, Cerebrovascular Ischemic and Hemorrhagic Diseases.

INTERNAL MEDICINE

- DISEASES OF RESPIRATORY SYSTEM:

Asthma, Chronic Obstructive Pulmonary Disease, Interstitial Pneumopathies, Pneumonias, Bronchiectasis, Cystic Fibrosis, Sarcoidosis, Pulmonary Neoplasms, Diseases of the diaphragm, chest wall, the pleura and mediastinum, Diseases of the upper airways, Respiratory failure, Tuberculosis.

- ENDOCRINE AND METABOLIC DISEASES:

Metabolic Syndrome, Diabetes Mellitus, Hypoglycemic Syndromes, Dyslipidemia, Obesity, Thinness, Parathyroid, Hypercalcaemic And Hypocalcaemic Syndromes, Osteoporosis, Pituitary (Adenomas, Acromegaly, Cushing Disease, Hypopituitarism), Diabetes Insipidus and SIADH, Thyroid (Toxic and Non Toxic Nodular Goiter, Grave's Disease, Hypothyroidism, Thyroiditis, Benign And Malignant Tumors), Adrenal Gland (Incidentalomas, Addison Disease, Conn Disease, Pheochromocytoma), Hyperandrogenism, Hypogonadism, Gout And Alterations Purine Metabolism.

- DISEASES OF THE KIDNEYS:

Acid-Base and Electrolytes Disturbances, Primitive Glomerular Diseases, Secondary Glomerular Diseases (Metabolic and Autoimmune), Urinary Tract Infections and Pyelonephritis, Tubulopathies, Vascular Diseases of the Kidney, Kidney Stones (Nephrolithiasis), Acute Renal Insufficiency, Chronic Kidney Disease.

- DISEASES OF THE GASTROINTESTINAL SYSTEM:

Functional Diseases, Inflammatory and Neoplastic Diseases of the Esophagus, Gastroesophageal Reflux, Gastritis, Peptic Ulcer, Zollinger-Ellison Syndrome, Neoplasms of the Stomach, Functional Gastrointestinal Disorders, Diarrhea, Malabsorption, Inflammatory Enteropathy, Intestinal Vascular, Neoplasms of the Large and Small Intestine, Pancreatitis, Pancreatic Cancer, Food Poisoning, Acute Hepatitis, Chronic Hepatitis, Diseases of the Biliary Tract, Liver Cirrhosis and its Major Complications, Acute and Chronic Liver Failure and Hepatic Encephalopathy.

- DISEASES OF THE BLOOD:

Clinical and Diagnostic Classification of Anemia, Myeloproliferative Diseases, Acute Leukemias, Malignant Lymphomas, Plasma Cell Disorders, Chronic Lymphoproliferative Syndromes, Bone Marrow Transplantation, Hemostasis and Coagulation Disorders.

PROGRAM

- THE GENETIC INTER-INDIVIDUAL VARIABILITY AND THE CONCEPTS OF POLYMORPHISM AND MUTATION. PRINCIPAL TYPES OF GENETIC POLYMORPHISMS. HAPLOTYPES.

MEDICAL GENETICS

- METHODOLOGICAL APPROACHES TO STUDY INTER-INDIVIDUAL GENETIC VARIABILITY AND TO IDENTIFY GENES INVOLVED IN COMPLEX MULTIFACTORIAL DISEASE SUSCEPTIBILITY AND DRUG RESPONSE (CANDIDATE GENE APPROACH, GENOME WIDE ANALYSIS, NGS).

- THE CONCEPT OF GENOMIC BIOMARKER.

- DIFFERENT TYPES OF GENETIC TESTING AND THEIR CORRECT USE IN CLINICAL PRACTICE. CONCEPT OF ANALYTICAL VALIDITY, CLINICAL VALIDITY AND CLINICAL UTILITY FOR GENOMIC BIOMARKERS.

- EXTENSION AND EXCEPTIONS TO MENDEL'S LAWS.

- GENETIC COUNSELLING, PEDIGREE ANALYSIS, EMPIRIC RISK.

- GENETICS IN MULTIFACTORIAL TRAITS AND COMPLEX DISEASES.

- MEDICAL GENOMICS:

- Cancer genomics and personalized medicine:

- Hereditary cancer syndrome: • Hereditary breast cancer and ovarian cancer syndrome (HBOC)
• Lynch syndrome (Hereditary nonpolyposis colorectal cancer)

- Cancer genetic counseling.

- PHARMACOGENETICS TESTING AND CLINICAL UTILITY: VARIOUS ILLUSTRATIVE EXAMPLES IN DETAILS OF APPLICATION OF PHARMACOGENOMICS IN SAFETY AND EFFICACY OF DRUGS IN DIFFERENT FIELDS:

- Oncology (Pharmacogenetics of: Irinotecan, Tamoxifen, Cetuximab, Herbitux);

- Cardiovascular diseases (Warfarin, Statins);

- Infectious diseases (Hiv: Abacavir and severe adverse reactions; HCV:Peg Interferon efficacy and IL28 polymorphisms.);

- Pharmacogenetics Therapy of pain and anesthesia.

- APPLICATIONS OF PGX IN DRUG DISCOVERY AND CLINICAL TRIALS AND IN PHARMACOVIGILANCE.

- FROM GENOTYPING TO DRUG LABEL-CHALLENGES.

- PHARMACOGENOMICS; THE REGULATORY ENVIRONMENT.

PROGRAM

- GENERAL LEARNING OBJECTIVES

The general objectives of the course are to understand the basic scientific principles related to cancer and its treatment, and to ensure that the student acquires clinical competence in the investigation and management of neoplastic diseases.

- SPECIFIC LEARNING OBJECTIVES

- Epidemiology of cancer, including risk factors.
- Carcinogenesis, cancer growth and proliferation, cancer immune tolerance.
- Pathophysiology of the immune system.
- Basic scientific knowledge, including molecular biology, biochemistry, pathophysiology, pharmacology, growth kinetics, genetics, endocrinology and immunology, as they relate to the understanding of cancer and its diagnosis and treatment.
- Assessment and investigations of patients with cancer, including history, physical examination, laboratory and imaging techniques.
- Performance Status Evaluation (Karnofsky and ECOG scores).
- Tumour staging .
- Response Evaluation Criteria In Solid Tumours (RECIST).
- Principles of therapy of oncological diseases and clinical effects of therapeutic approaches used.
- Cytotoxic approach: therapeutic aims (neoadjuvant, adjuvant, palliatives approaches).
- Radiotherapy.
- Targeted Therapies.
- Immune anti-cancer agents.
- Supportive care.
- Drug resistance.
- Management of medical emergencies and complications resulting from cancer or its treatment.

MEDICAL ONCOLOGY

TEXTBOOKS

Internal Medicine

Harrison – Principles of Internal Medicine.

Medical Genetics

Medical Oncology - DeVita, Hellman, and Rosenberg's Cancer: Principles & Practice of Oncology. Ed: Lippincott Williams and Wilkins. 10th Edition 2015 ISBN 9781451192940

- John E. Niederhuber. Abeloff's Clinical Oncology. Ed Elsevier. 5th Edition ISBN: 978-1-4557-2865-7

EXAM COMMISSION

The Coordinator, full Professors of the disciplines, Professors of similar disciplines, Specialists of the subject, compose the exam Commission of the Integrated Course.

Sbraccia Paolo, President
Federici Massimo
Di Cola Giovanni
Leo Roberto
Biancolella Michela
Giardina Emiliano
Borgiani Paola
D'Adamo Monica
Roselli Mario
Torino Francesco

CONTACTS

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PREREQUISITES: Previous knowledge and competence in the following subjects: Histology and Embryology, Physiology and Pathophysiology, Biology and Genetics, Biochemistry and Molecular biology, Microbiology, Systematic Pathology 1/2/3, Neurology, Psychiatry, Orthopedics and Rheumatology.

The specific learning outcomes of the program are coherent with the general provisions of the Bologna Process and the specific provisions of EC Directive 2005/36/EC. They lie within the European Qualifications Framework (Dublin Descriptors) as follows:

1. **Knowledge and Understanding**

- Assess the physiologic principles, which govern the function of the main body systems and the alterations induced by functional and structural abnormalities.
- Describe the main aspects of general pathology and explain the physiopathologic mechanisms underlying the concept of benign and malignant disorders as well as reversible and irreversible cellular damage
- Demonstrate knowledge about the mechanism of cell cycle maintenance and regulation, the factors affecting it and their consequences.
- Understand the core principles of acute and chronic inflammation in relation to the molecular, systemic and clinical aspects.
- Relate the general principles, terminology, and modes of spreading of disease to the study of Systemic Pathology and the ways in which pathology contributes to the understanding of patient presentation in a clinical setting.
- Focus on each organ and describe the pathogenesis of the main disease.
- Correlate basic disease states studied at a cellular and gross anatomic level with the overt clinical signs and symptoms seen in those disorders.
- Learn to interpret appropriate laboratory and diagnostic studies.

2. **Applying Knowledge and Understanding**

- Apply the diagnostic procedure in pathology, through introduction of the differential diagnostic methods at the clinical level.
- Apply a basic understanding of histopathology and morbid anatomy to the examination of microscopic sections and gross specimens, respectively, displaying pathologic processes.
- Provide a differential diagnosis based on specific clinical data, providing a comprehensive explanation of the underlying reasoning.
- Learn the practical aspects of the pathologic diagnostic instruments, when to use them and how to perform them.

3. **Making Judgements**

- Recognize the importance of an in-depth knowledge of the topics consistent with proper medical education.
- Identify the fundamental role of proper theoretic knowledge of the subject in the clinical practice.

4. **Communication Skills**

- Present the topics orally in an organized and consistent manner.
- Use of proper scientific language coherent with the topic of discussion.

5. **Learning Skills**

- Identify the possible use of the acknowledged skills in the future career.
- Assess the importance of the acquired knowledge in the overall medical education process.