UNICAMILLUS

Corso di laurea Magistrale in Medicina e Chirurgia

Insegnamento integrato: Medicina Interna e Genetica Medica I
SSD: **MEDS-05/A, MEDS-09/A, MEDS-01/A, MEDS-24/C**

Nome docente responsabile: **Veronica Ojetti** mail: veronica.ojetti@unicamillus.org

Numero di CFU totali: 8

General, Clinical and Pediatric Nursing Sciences
1+1 CFU, Prof.ssa Filomeno Lucia mail: lucia.filomeno@unicamillus.org

Medical Genetics
1+1 CFU, Prof. Latini Andrea mail: andrea.latini@unicamillus.org

Geriatrics
2+2 CFU Prof.ssa Veronica Ojetti mail: veronica.ojetti@unicamillus.org
2+2 CFU Prof. Colloca Giuseppe Ferdinando mail: giuseppe.colloca@unicamillus.org

Medical Oncology
1+1 CFU Prof. Cognetti Francesco mail francesco.cognetti@unicamillus.org
1+1 CFU Prof. Bongiovanni Alberto mail alberto.bongiovanni@unicamillus.org

PREREQUISITES

● For the Internal Medicine (Geriatrics and Gerontology) module, students are expected to have knowledge of medical semiotics, pathophysiology, and the basics of the main clinical topics in internal medicine.

● For the Medical Genetics module, basic genetics and the main patterns of inheritance of genetic diseases are required prerequisites.

● There are no prerequisites for the Nursing Science module.

EDUCATIONAL OBJECTIVES:

● The integrated course in Internal Medicine and Medical Genetics 1 aims to provide students with knowledge of the geriatric approach, the main recurrent diseases in geriatrics, multidisciplinary assessment, geriatric syndromes and frailty, genetic counseling and genetic testing, knowledge of stem cells and their applications, insights into the family history of sudden cardiac death and related diseases, cancer prevention and risk factors, classification of neoplastic diseases, staging, surgical, radiation, and medical treatments for both the initial phase of the disease and metastatic disease, and some technical nursing skills.

● Students will learn the geriatric approach and multidisciplinary assessment, knowledge of genetic

testing, stem cells and their applications; the principles of cancer prevention and risk factors, classification

of neoplastic diseases, staging, surgical, radiation, and medical treatments; and some nursing techniques relevant to patient care in the medical field.

● At the end of the course, the student will have acquired the main methods of multidisciplinary geriatric evaluation, the evaluation and treatment of frailties and complexities in aging, will be able to understand the main techniques used in the genetic field and identify the appropriate genetic tests, will be able to identify neoplastic pathologies and their staging, surgical, radiation and medical treatments.

EXPECTED LEARNING OUTCOMES

Knowledge and Understanding:

Upon completion of this course, the student will be able to:

● Understand the main aspects of aging: demographics in Italy, Europe, and non-European countries, and their implications for clinical and healthcare.

● Understand the principles of biology and physiology of aging.

● Understand the management of comorbidities, polypharmacy, and geriatric syndromes. Know the main screening tests for identifying frailty.

● Understand the management of the most common internal medicine diseases

● Understand the epidemiology and risk factors of cancer

● Understand the differences between primary and secondary cancer prevention

● Understand the principles of histopathological classification and, if applicable, molecular classification of individual neoplastic diseases

● Understand the staging, surgical, radiation, and medical treatments for both the initial stage of the disease and metastatic disease.

● Principles of clinical research in oncology.

Genetics

● Understand the correct genetic terminology

- Understand the different types of genetic testing
- Describe the aspects and characteristics of genetic counseling
- Understand the characteristics of stem cells and their potential applications
- Acquire knowledge of the genetic predisposition for diseases related to sudden cardiac death

Nursing Sciences

- Understand the general principles that guide the work of the nursing profession.
- Understand the mechanisms underlying some nursing techniques
- Recognize the differences between drug administration routes and drug dosage calculations

Ability to apply knowledge and understanding

Upon completion of the course, students will be able to:

- Perform a proper history and clinical assessment of older adults
- Apply and interpret the principles of evidence-based medicine in the target population and the main guidelines
- Use multidimensional geriatric assessment tools
- Recognize the main pathological conditions that can be found in older patients and the most common internal medicine diseases
- Proper management of patient complexity and fragility

Oncology
- Perform precise and documented observations of tumor risk factors and primary and secondary prevention.
- Understand and explain the principles of histopathological classification and, where appropriate, the molecular classification of individual neoplastic diseases.
- Understand and explain staging, surgical, radiation, and medical treatments for both the initial stage of the disease and metastatic disease.

Genetics
- Perform precise and documented observations and conduct appropriate critical analysis to draw verifiable generalizations.
- Understand and explain the characteristics of totipotent cells and how they can be useful in cell and gene therapy.

● Analyze pedigrees and clinical and molecular genetic data useful for genetic counseling and understand the main types of genetic tests and their correct use.

Nursing Science

● Critically analyze teamwork and learn how to collaborate with nursing professionals.

● Perform certain nursing techniques.

● Understand and explain the differences between drug administration routes.

● Calculate drug dosages and dilutions.

Communication Skills

Upon completion of the course, the student will be able to:

● The student will be able to correctly identify and treat the main problems in geriatrics and direct the patient towards the most appropriate treatment plan.

● The student will be able to recognize, diagnose, and treat the most common internal medicine diseases.

Oncology

● The student will be able to adequately describe cancer risk factors and primary and secondary prevention.

● Perform precise and documented observations and critically analyze the principles of histopathological classification and, if applicable, the molecular basis of individual neoplastic diseases, in order to draw verifiable generalizations.

● Understand and explain staging, surgical, radiation, and medical treatments for both the initial stage of the disease and metastatic disease.

Genetics

● Possess appropriate scientific language for accurate and rigorous communication.

● Understand the various types of genetic testing and acquire knowledge of genetic counseling and prenatal diagnosis using correct genetic terminology.

● Describe the characteristics of stem cells.

● Illustrate the implications and appropriate approach in cases of family history of sudden cardiac death and related diseases.

Nursing Sciences

● Will be able to communicate effectively and collaborate as part of a team with nursing professionals.

● They will be able to describe some nursing techniques, using appropriate terminology.

● They will be able to adequately describe drug dilution and dosage calculation, demonstrating that they have learned appropriate scientific language for accurate and rigorous communication.

● They will be able to describe drug administration routes using appropriate scientificlanguage.

Oncology
● Have adequately analyzed and learned about cancer risk factors and primary and secondary prevention.
● Have acquired the ability to use the principles of histopathological classification and, where appropriate, molecular classification of individual neoplastic diseases.
● Have acquired the ability to summarize and correlate tumor staging, surgical, radiation, and medical treatments for both the initial stage of the disease and metastatic disease.

Genetics
● Will be able to independently develop the logical procedures and strategies that allow for the application of the experimental method and the correct analysis and interpretation of experimental data.
● Students will be able to summarize and correlate various topics and critically utilize genetic tests for the molecular diagnosis of monogenic and chromosomal diseases.
● Students will be familiar with stem cells.
● Students will be able to assess family history of conditions related to sudden cardiac death.

Nursing Sciences
● Students will be able to independently develop teamwork and understand strategies for collaborating with nursing professionals.
● Students will be able to manage and execute certain nursing techniques.
● Students will be able to manage the administration of medications through various routes.
● Students will be able to manage the process of calculating drug dosages and dilutions.

Learning Skills
By the end of the course, students will have acquired the skills and learning methods needed to deepen and improve their skills in geriatrics, oncology, genetics, and nursing, including through consultation with scientific literature.

PROGRAM

Geriatrics and Gerontology Syllabus
● Aging: Demographic Aspects in Italy, Europe, and the World
- ● Principles of Biology and Physiology of Aging.
- ● Evidence-Based Medicine and Geriatric Medicine as a Complex Medicine

- Chronic Diseases, Multiple Pathologies, and Disability
- The Concept of Active Life Expectancy
- Geriatric Syndromes
- Frailty
- Multidimensional Geriatric Assessment
- Brain Aging, Cognitive Disorders in the Elderly
- Sarcopenia
- Osteoporosis
- Diabetes Mellitus
- Arterial Hypertension
- Pneumonia, Asthma, COPD
- Heart Failure
- Angina and Heart Attack
- Inflammatory Bowel Disease
- Obesity, Metabolic Syndrome
- Liver Cirrhosis
- Cerebral Ischemia

Oncology Syllabus

- Cancer incidence, mortality, and prevalence, epidemiological data, risk factors;
- Breast cancer, histopathological classification, staging, adjuvant and neoadjuvant chemotherapy, hormonal treatment;
- Breast cancer, prognostic factors, molecular classification and genomic testing, and choice of adjuvant treatment;
- Breast cancer, treatment of metastatic disease;
- Ovarian cancer, epidemiology, histotypes, staging, hereditary tumors, and surgical and medical treatment;
- Bladder cancer, epidemiology, incidence and mortality, risk factors, initial signs and symptoms, histology, staging, and treatment;
- Malignant melanoma, diagnosis, staging, and treatment;
    - Colorectal cancer: epidemiology, surgical treatment, adjuvant and metastatic treatment;
    - Pancreatic neoplasia. Epidemiology, risk factors, diagnosis, histology, staging, and treatment
    - Gastric cancer: epidemiology, surgical treatment, adjuvant treatment, and treatment of the metastatic phase
    - Head and neck tumours
    - Brain tumours, histological and molecular diagnosis, and treatment;
    - Soft tissue sarcomas, epidemiology, incidence and mortality, survival, histological and molecular classification, staging, and surgical and medical treatment;
    - Bone tumours, epidemiology, incidence and mortality, survival, histological and molecular classification, staging, and surgical and medical treatment;
    - Prostate cancer, epidemiology, diagnosis, surgical, radiation, and medical treatment;
    - Neuroendocrine and endocrine gland neoplasms, epidemiology, incidence and mortality, risk factors, initial signs and symptoms, histology, staging, and treatment;
    - Paraneoplastic syndromes;
    - Oncological emergencies;

- Secondary cancer prevention: oncological screenings;
- Lung cancer, epidemiology, diagnostic evaluation, and treatment;
- Clinical research in oncology.

Genetics Syllabus

- Genetic counseling
- Genetic testing, techniques used, and prenatal diagnosis
- Stem cells and gene therapy
- Family history of sudden cardiac death and related conditions

Nursing Science Syllabus

- Nursing profession: professional profile, code of ethics, professional and multi-professional behavior.
- Nursing skills: Venipuncture and capillary blood sampling, blood culture sampling.
- Nursing skills: Peripheral venous access placement, performing an electrocardiogram.
- Nursing skills: Intramuscular injection and subcutaneous administration, principles of calculating drug dosages and dilution.

TEACHING METHOD

The course consists of lectures, 40 hours of Internal Medicine, 20 hours of Oncology, 10 hours of Genetics, and 10 hours of General, Clinical, and Pediatric Nursing Sciences 1.

Instructors use teaching tools such as PowerPoint presentations with explanatory diagrams, illustrations, and images to describe the content of the modules. Videos and animations will be used to supplement the processes described in class. Interactive lessons will include exercises in class (both individually and in groups).

Lectures will be taught in English.

Interim tests may be required for all modules. Attendance is mandatory.

ASSESSMENT METHOD

The exam consists of an oral exam. The oral exam gives students the opportunity to

demonstrate their knowledge by discussing course topics, reasoning about issues related to the modules, and demonstrating the ability to make connections and express themselves with appropriate scientific language.

The final grade will be based on a weighted average for the integrated modules. The exam will be evaluated overall according to the following criteria:

- Unsatisfactory: significant deficiencies and/or inaccuracies in knowledge and understanding of the

topics; limited analysis and synthesis skills; frequent generalizations.

● 18-20: knowledge and understanding of the topics is barely adequate with possible imperfections; sufficient analysis, synthesis, and independent judgment.

● 21-23: knowledge and understanding of the topics are routine; correct analysis and synthesis skills with coherent logical argumentation.

● 24-26: fair knowledge and understanding of the topics; good analysis and synthesis skills with rigorously expressed arguments.

● 27-29: Complete knowledge and understanding of the topics; remarkable analytical and synthesis skills. Good independent judgment.

● 30-30L: Excellent knowledge and understanding of the topics. Remarkable analytical and synthesis skills and independent judgment. Originally expressed arguments.

RECOMMENDED TEXTS AND BIBLIOGRAPHY

Internal Medicine (Geriatrics and Gerontology) ● Manual of Geriatrics by Antonelli Incalzi Raffaele; SIGG Italian Society of Geriatrics ● Hazzard's Geriatric Medicine and Gerontology, (Principles of Geriatric Medicine & Gerontology) McGraw-Hill ● Harrison's Principles of Internal Medicine, 21e

Oncology ● Russo - M. Peeters - L. Incorvaia - C. Rolfo. Practical Medical Oncology Textbook – Springer

Genetics ● Educational materials in PDF format and scientific papers will be provided for further study of the topics covered.

Nursing Sciences ● Potter & Perry (2017). Fundamentals of Nursing (9th Ed.) St. Louis, Missouri: Elsevier. ● PPT Slides. Students will study the slides provided and integrate them with the textbook.