

Masters Degree in Medicine and Surgery

INTEGRATED TEACHING: Internal medicine and medical genetics I

NUMBER OF CFU: 8

SSD: MED/09, MED/06, MED/03, Med/45

RESPONSIBLE PROFESSOR: Prof.ssa Dhurata Ivziku

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Module: Internal Medicine (Geriatrics and Gerontology)

SSD: MED/09

Number of CFU: 4

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Module: Medical Genetics (Oncology)

SSD: MED/06

Number of CFU: 2

Professor: Prof. Francesco Cognetti

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Module: Medical Genetics

SSD: MED/03

Number of CFU: 1

Professor: Prof.ssa Michela Murdocca

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Module: Nursing science general, clinical and pediatric 1

SSD: MED/45

Number of CFU: 1

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PREREQUISITES

- For the Internal Medicine module (Geriatrics and Gerontology), it would be desirable for the student to have the notions of medical semeiotics, physiopathology, and the basics of the leading clinical topics of internal medicine.

- For Medical genetics module, the principles of genetic and the main models of genetic diseases transmission are need.
- There are no prerequisites for the nursing sciences module.

LEARNING OBJECTIVES:

- The integrated teaching of Internal Medicine and Medical Genetics 1 aims to provide students with knowledge related to the geriatric approach, common geriatric conditions, multidisciplinary assessment, geriatric syndromes, frailty, genetic counseling, and genetic testing. It also covers information about stem cells and their applications, in-depth study of rare genetic diseases such as laminopathies, cancer prevention and risk factors, classification of neoplastic diseases, staging, surgical, radiation, and medical treatments for both the initial and advanced phases.
- The student will learn about the geriatric approach and multidisciplinary assessment, concepts about genetic testing, stem cells and their applications; principles of cancer prevention and risk factors, classification of neoplastic diseases, staging, surgical, radiation, and medical treatments; some nursing techniques relevant to patient care in the medical field will be taught as well.
- At the end of the course, the student will have acquired the main methods for multidisciplinary geriatric assessment, the evaluation and treatment of frailty and complexity in aging, will be able to understand genetic testing and identify rare genetic diseases, will be able to identify neoplastic diseases and their staging, surgical, radiation, and medical treatments.

LEARNING OUTCOMES

Knowledge and Understanding:

At the end of this teaching, the student should know:

Internal Medicine (Geriatrics and Gerontology)

- Know the main aspects related to Aging: demographic elements in Italy, Europe, and non-European countries and consequent implications in the clinical and healthcare fields
- Know the main aspects related to principles of biology and physiology

of Aging,

- Know the main aspects related to management of comorbidities, polypharmacy, geriatric syndromes. Know the primary screening tests to identify frailty.

Oncology

- Understand the epidemiology and risk factors of tumors.
- Understand the differences between primary and secondary cancer prevention.
- Understand the principles of histopathological classification and the molecular basis of individual neoplastic diseases.
- Understand the staging, surgical, radiation, and medical treatments for both the early stage and metastatic disease.
- Principles of clinical research in oncology.

Genetics

- Understand and use the right genetic terminology
- Know the different types of genetic tests
- Describe the aspects and characteristics of genetic counseling
- Know the peculiarities of stem cells and their potential applications
- Acquire notions relating to rare genetic diseases such as Laminopathies

Nursing science

- 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 the calculation of drug dosages.

Applying knowledge and understanding

At the end of this teaching, the student will be able to:

Internal Medicine (Geriatrics and Gerontology)

- Perform a correct history and clinical evaluation of the older adult

- Apply and interpret the principles of evidence-based medicine in the reference population and the main guidelines
- Use geriatric multidimensional assessment tools
- Recognize the main pathological conditions that can be found in the older patient
- Correct management of the complexity and frailty of the patient

Oncology

- Apply and interpret the principles of epidemiology and risk factors of tumors.
- Recognize the differences between primary and secondary cancer prevention.
- Use the principles of histopathological classification and the molecular basis of individual neoplastic diseases.
- Recognize the staging, surgical, radiation, and medical treatments for both the early stage and metastatic disease.
- Apply the principles of clinical research in oncology.

Genetics

- Perform accurate and documented observations conducting a proper critical analysis in order to derive valid generalizations from them
- Understand and explain the characteristics of stem cells and how they can be useful in cell and gene therapy.
- Examine pedigrees, clinical and molecular genetic data useful for genetic counseling and learn about the main types of genetic tests and their correct use.

Nursing science

- Perform a critical analysis of teamwork and understand how to collaborate with nursing professionals.
- Perform certain nursing techniques.
- Understand and explain the differences between drug administration routes.
- Calculate drug dosages and their dilutions.

Communication skills

At the end of this teaching, the student will be able to:

Internal Medicine (Geriatrics and Gerontology)

- The student will be able to correctly identify and treat the main problems in the geriatric age and direct the patient towards the correct treatment procedure

Oncology

- The student will be able to adequately describe the epidemiology and risk factors of tumors.
- The student will be able to describe the differences between primary and secondary cancer prevention.
- The student will be able to adequately describe the principles of histopathological classification and the molecular basis of individual neoplastic diseases.
- The student will be able to adequately describe the staging, surgical, radiation, and medical treatments for both the early stage and metastatic disease.
- The student will be able to adequately describe the principles of clinical research in oncology.

Genetics

- Fully describe genetic phenomenon, demonstrating the acquisition of a scientific language suitable for the purpose of accurate and rigorous communication.
- Describe the main genetic tests, acquire notions on genetic counseling and prenatal diagnosis using correct genetic terminology.
- Discriminate several aspects of genetic diseases called Laminopathies.

Nursing science

- The student will be able to communicate effectively and collaborate within a team with nursing professionals.
- The student will be able to describe some nursing techniques using proper terminology.

- The student will be able to adequately describe drug dilution and dosage calculation, demonstrating the acquisition of a scientific language suitable for accurate and rigorous communication.
- The student will be able to describe drug administration routes using appropriate scientific language.

Making judgements

At the end of this teaching, the student should know:

Internal Medicine (Geriatrics and Gerontology)

- Have learned the central notions of geriatrics to be able, in any healthcare setting, to have correct management of the complex, frail, adult/elderly patient

Oncology

- Independently interpret the epidemiology and risk factors of tumors.
- Independently interpret the differences between primary and secondary cancer prevention.
- Ability to synthesize the principles of histopathological classification and the molecular basis of individual neoplastic diseases.
- Ability to critically utilize the staging, surgical, radiation, and medical treatments for both the early stage and metastatic disease.
- Ability to critically utilize the principles of clinical research in oncology.

Genetics

- Analyzed and learned from exemplary biology experiments and will be able to independently develop logical procedures and strategies that allow them to apply the experimental method, as well as correctly analyze and interpret experimental data.
- Acquired the ability to synthesize and correlate different topics, and critically use genetic tests for the molecular diagnosis of monogenic and chromosomal diseases.
- Know stem cells and Laminopathies

Nursing science

- The student will be able to independently develop teamwork skills and will be familiar with strategies for collaborating with nursing

professionals.

- The student will have acquired the ability to manage and perform certain nursing techniques.
- The student will have acquired the ability to manage and administer drugs through various administration routes.
- The student will have acquired the ability to manage the process of calculating drug dosages and their dilutions.

Learning ability

At the end of the course, the student will have acquired skills and appropriate learning methods for deepening and enhancing their competencies in the field of geriatrics and gerontology, oncology, genetics, and nursing sciences, including consultation of scientific literature.

COURSE SYLLABUS

Syllabus Internal Medicine (Geriatrics and Gerontology)

- Aging: Demographic aspects in Italy, in Europe, and in the Countries
- Principles of biology and physiology of aging.
- Evidence-Based Medicine and Geriatric Medicine as medicine of complexity
- Chronic diseases, poly pathology and disability
- active life expectancy concept
- geriatric syndromes
- The fragility
- Geriatric multidimensional assessment
- Cerebral aging, cognitive disorders in the elderly
- Sarcopenia
- Osteoporosis

Syllabus Oncology

- Cancer incidence, mortality and prevalence, epidemiological data, risk factors, 1 hr;
- Breast cancers, histopathological classification, staging, adjuvant and

- neoadjuvant chemotherapy treatment, hormonal treatment, 2 hours;
- Breast cancers, prognostic factors, molecular classification and genomic testing, and choice of adjuvant treatment, 1 hr;
 - Breast cancers, treatment of metastatic disease, 2 hours;
 - Ovarian cancer, epidemiology, histo types, staging, familial heredo tumors and surgical and medical treatment, 2 hours;
 - Bladder cancer, epidemiology, incidence and mortality, risk factors, initial signs and symptoms, histology, staging and treatment, 1 hour;
 - Malignant melanoma, diagnosis, staging and treatment, 1 hour;
 - Colorectal carcinoma, epidemiology, surgical treatment, adjuvant and metastatic phase treatment, 1 hour;
 - Brain tumors, histologic and molecular diagnosis and treatment, 1 hour;
 - Soft part sarcomas, epidemiology, incidence and mortality, survival, histologic and molecular classification, staging, and surgical and medical treatment, 1 hour;
 - Bone tumors, epidemiology, incidence and mortality, survival, histologic and molecular classification, staging, and surgical and medical treatment, 1 hour;
 - Prostate cancers, epidemiology, diagnosis, surgical, radiation and medical treatment, 1 hour;
 - Secondary cancer prevention: cancer screenings, 1 hour;
 - Covid in cancer patients, 1 hour;
 - Lung cancers, epidemiology, diagnostic framing and treatment, 2 hours;
 - Clinical research in oncology, 1 hour.

Syllabus Genetics

- Genetic counseling
- Genetic tests, techniques used and prenatal diagnosis
- stem cells and gene therapy

- Laminopathies

Syllabus Nursing science

- Nursing profession: professional profile, code of ethics, professional and multiprofessional action.
- Nursing skills: Venous and capillary blood sampling, blood culture collection.
- Nursing skills: Peripheral venous access placement, performing an electrocardiogram (EKG).
- Nursing skills: Intramuscular injection and subcutaneous medication administration, principles of drug dosage calculation and dilution.

TEACHING METHODS

The integrated teaching is structured with 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.

The professors use educational tools such as organized presentations in PowerPoint files with explanatory diagrams, illustrations, and images to describe the module contents. Videos and animations will be used for the integration of the processes discussed in class. Interactive lessons with in-class exercises (both individual and group-based) are scheduled.

The lessons will be conducted in English.

Midterm assessments might be scheduled for all modules. Attendance is mandatory.

METHODS OF LEARNING ASSESSMENT

The exam consists in an oral test. In the oral test, the student is given the opportunity to demonstrate the preparation by discussing course topics, reasoning, and showcasing the ability to make connections and express themselves using appropriate scientific language.

The final evaluation will be the result of a weighted average between the

evaluations of the integrated course modules.

The exams will be assessed according to the following criteria:

- Insufficient : significant deficiencies and/or inaccuracies in knowledge and understanding of the topics; limited analytical and synthesis skills, frequent generalizations.
- 18-20: knowledge and understanding of the topics are barely sufficient with possible imperfections; adequate skills in analysis, synthesis, and independent judgment.
- 21-23: knowledge and understanding of the topics are routine; correct skills in analysis and synthesis with coherent logical reasoning.
- 24-26: reasonable knowledge and understanding of the topics; good skills in analysis and synthesis with arguments expressed rigorously.
- 27-29: comprehensive knowledge and understanding of the topics; remarkable skills in analysis and synthesis. Good independence in judgment.
- 30-30L: Excellent level of knowledge and understanding of the topics. Remarkable skills in analysis, synthesis, and independence in judgment. Arguments expressed in an original manner.

RECOMMENDED TEXTS AND BIBLIOGRAPHY

Internal medicine (Geriatrics and gerontology)

- Manuale di Geriatria di Antonelli Incalzi Raffaele; SIGG Società Italiana di Geriatria
- Hazzard's Geriatric Medicine and Gerontology, (Principles of Geriatric Medicine & Gerontology) McGraw-Hill

Oncology

- A. Russo - M. Peeters - L. Incorvaia - C. Rolfo. Practical Medical Oncology Text Book -Springer

Genetics

- Will be provided material in PDF format and papers for deepening of the topics covered.

Nursing science

- Potter & Perry (2017). Fundamentals of Nursing (9th Ed.) St. Louis, Missouri: Elsevier.
- PPT Slides. Students are required to study the provided slides and supplement their learning with the textbook.