Pathology [1201507]

Offerta didattica a.a. 2024/2025

Docenti: GIUSEPPE PERRONE

Periodo: Primo Ciclo Semestrale

Syllabus non pubblicato dal Docente.

L'attività didattica è offerta in:

Facoltà Dipartimentale di Medicina e Chirurgia

Tipo corso	Corso di studio (Ordinamento)	Percorso	Crediti	S.S.D.
Laurea Magistrale Ciclo Unico 6 anni	Corso di Laurea Magistrale in Medicina e Chirurgia (2019)	comune	5	MED/08, MED/08, MED/08, MED/08

Stampa del 06/05/2025

Pathology [12014C1]

Offerta didattica a.a. 2024/2025

Docenti: ANDREA ONETTI MUDA

Periodo: Secondo Ciclo Semestrale

Syllabus non pubblicato dal Docente.

L'attività didattica è offerta in:

Facoltà Dipartimentale di Medicina e Chirurgia

Tipo corso	Corso di studio (Ordinamento)	Percorso	Crediti	S.S.D.
Laurea Magistrale Ciclo Unico 6 anni	Corso di Laurea Magistrale in Medicina e Chirurgia (2019)	comune	8	MED/08, MED/08, MED/08, MED/08

Stampa del 06/05/2025

Human Anatomy [1201202]

Offerta didattica a.a. 2024/2025

Docenti: SIMONE CAROTTI

Periodo: Ciclo Annuale Unico

Obiettivi formativi

The course aims to provide students with knowledge and understanding of the structural organization of the human body from the macroscopic to the microscopic level with the main ultrastructural aspects, as well as the most important anatomical-clinical and practical information.
Furthermore, the course aim is to ensure that the student is able to recognize the essential morphological characteristics of any systems, organs, tissues, cells and subcellular structures of the human body, as well as their main morpho-functional, topographical, radiological and clinical relations.

Prerequisiti

Knowledge of general and applied biology required and having passed the exam of Histology and Embryology.

Contenuti del corso

1st year, 2nd semester (Simone Carotti)
Principles of general anatomy. Construction criteria of the human body: external shapes and surface anatomy. General notions on the musculoskeletal system: bones, joints, muscles. Fundamental of systematic anatomy of skeletal segments, joints and muscles with elements of topographic anatomy, biomechanics, radiological and functional anatomy.
2nd year, 1st semester
Circulatory system: heart and pericardium, arteries, veins, lymphatic vessels; blood and lymph; spleen, thymus and lymph nodes (Alberto Caggiati). Respiratory system: airways, lungs, pleurae (Alberto Caggiati). Digestive system: alimentary canal and related glands (Alberto Caggiati). Uropoietic system: kidneys and urinary tract (Alberto Caggiati). Male reproductive system: testicle, spermatic ducts, external genitalia (Alberto Caggiati). Female reproductive system: ovaries, genital tracts, external genitalia (Simone Carotti). General organ morphology, structure and ultrastructure with hints of organogenesis (Simone Carotti); architecture and elements of functional, radiological, and clinical anatomy of any organs (Alberto Caggiati). Clinical and topographical anatomy of the neck, thorax, abdomen and pelvis (Alberto Caggiati).
II year, II semester
Endocrine system (Simone Carotti). Integumentary system (Alberto Caggiati). General organ morphology, structure and ultrastructure with hints of organogenesis (Simone Carotti); architecture and elements of functional, radiological, and clinical anatomy of any organs (Alberto Caggiati).
Neuroanatomy: general principles, ontogenesis; systematic and functional anatomy of the central nervous system: pathways and neural centers (Alberto Caggiati). General morphology of organs, architecture, structure and ultrastructure with hints of morphogenesis (Simone Carotti); topographic and clinical anatomy of the central nervous system (Alberto Caggiati). Peripheral nervous system; vegetative nervous system; sense organs: eye and ear (Alberto Caggiati).

Metodi didattici

Frontal lessons
Interactive practical lessons in clinical anatomy, practice exercises in macroscopic anatomy (plastic models, isolated organs, virtual anatomical table, videos of anatomical dissections and case discussion) and microscopic anatomy (observation of specimens under the microscope, discussion of digital histological specimens): about 37 ,5 hours
Guided learning with tutor: for small groups.

Modalità di verifica dell'apprendimento

The exam will take place at the end of the course, in the sessions provided by academic calendar. At the end of each semester the student will be subjected to an interview, which constitutes credit for the final exam, about the part of the program carried out.
At the end of the second semester of the first year, the student will be subjected to an interview consisting of three parts: a bone model to be described or an anatomical image of osteology to be completed with the indication of the names of the various parts, the description of a joint compartment and of a muscle group and / or relative fascial

structures.
At the end of the first semester of the second year the student will be subjected to a written interview with optional oral integration consisting of a part carried out under the microscope in which he must recognize the microscopic structure of an organ by discussing its fundamental characteristics in terms of structure and ultrastructure and a part in which it must describe the shape, position and relationships of an organ and / or delimit and describe the composition of a space or anatomical region with a topographical approach, and / or illustrate the main stages of organogenesis.
At the end of the second semester of the second year, the student undergoes a final interview in which he is asked to describe the structure and functional notes of the endocrine system with related elementary clinical correlates and to describe the morphological and structural aspects of the central and peripheral nervous system. He will be required to discuss elementary clinical cases in which simple recognition of the anatomical structures involved is due, based on the most relevant symptoms. If the intermediate tests have not been taken at the end of each semester, the student will be submitted to an overall exam consisting of all the tests described above.
The exam takes place at the end of the course in the sessions according to the academic schedule. The results of any checks on the individual modules will also be taken into consideration in the final score.
Criteria for final score are: correctness, completeness and clarity of the presentation; the ability to recognize and describe images of microscopic structures, to describe organs and regions of the body; the ability to identify the main morphological and structural elements of clinical relevance in the context of elementary clinical scenarios. The exam will be considered passed if the student is able to answer at least sufficiently to all the questions. The grade assigned will depend on in-depth study of the issues, correct use of scientific language and the logical-critical skills demonstrated in the identification and description of the microscopic and macroscopic structure of organs, systems and anatomical regions with their fundamental functional and clinical associations.
The assessment of learning provides for the attribution of a final grade expressed out of thirty. In particular, the grade assigned will be in the intervals indicated below based on the learning parameters taken into consideration:
18-23 Sufficient knowledge of the themes, modest language properties, modest / poor logical-critical ability in the recognition and description of structures and their functional and clinical correlates.
24-27 sufficient / good knowledge of the topics, modest / good language skills, modest / good logical-critical ability in the recognition and description of structures and their functional and clinical correlates.
28-30 very good / excellent knowledge of the topics, very good / excellent language properties, very good / excellent logical-critical ability in the recognition and description of structures and their functional and clinical correlates.
30L excellent knowledge of the themes, excellent language properties, excellent logical-critical ability in the recognition and description of structures and their functional and clinical correlates.

Testi di riferimento
The main recommended textbooks are:
Autori vari, Trattato di Anatomia Umana, (ed. 2007), Edi-Ermes.
Gaudio, Carpino, Franchitto, Morini, Onori. Sistema nervoso centrale. Piccin, 2011.
Autori vari, Anatomia del Gray – Le basi anatomiche della pratica clinica, (2°edizione italiana), EDRA Elsevier, 2017.
Autori vari, Prometheus - Atlante di Anatomia, Edizione italiana a cura di E. Gaudio. EdiSES, 2014.
Netter, Atlante di anatomia umana, 5° Edizione italiana, Elsevier.
AAVV, Guida alla lettura dell’atlante di Anatomia Umana di Frank Netter, Elsevier, 2014.
Other texts:
Autori vari, Prometheus – Testo Atlante di Anatomia (3 volumi), Edizione italiana a cura di E. Gaudio. EdiSES, 2014.
Sobotta, Atlante di anatomia, Elsevier, 2009.
Anastasi, Tacchetti, Anatomia Umana – Atlante, Edi-Ermes, 2013. Autori vari, Gray – Atlante fotografico di dissezione, EDRA, 2013.
Autori vari, Istituzioni di Anatomia dell'Uomo, Testo/Atlante fondato da Giulio Chiarugi, 5 volumi, Piccin, 2019.
Marinozzi, Gaudio, Ripani, Anatomia clinica, Ed. Delfino, 2017.

Altre informazioni
Knowledge and understanding
The student will have to acquire a good knowledge and understanding of the structural organization of the human body in the various periods of life, from organogenesis to the various stages of adult development. Particular attention will be given to the knowledge of the morphology and structure of the body, according to topographic, macroscopic, microscopic, and ultrastructural anatomy. The main educational objective is the knowledge of the essential aspects that link anatomy on the one hand to the function of organs and systems, on the other to clinical practice.
Applying knowledge and understanding
At the end of the course, the student will be able to describe the structural organization of the human body in the various periods of life, from organogenesis to the various stages of development, at the anatomical-topographical, macroscopic, microscopic, and ultrastructural level; he will also be able to correlate the structural organization with the corresponding functions of systems, organs, tissues, as well as be able to understand the main morpho-functional, anatomo-topographical, anatomo-radiological, anatomo-clinical and applicative correlates, according to medical profession; the student will be able to identify macroscopic human anatomy preparations and recognize organ type under the microscope.

L'attività didattica è offerta in:

Facoltà Dipartimentale di Medicina e Chirurgia

Tipo corso	Corso di studio (Ordinamento)	Percorso	Crediti	S.S.D.
Laurea Magistrale Ciclo Unico 6 anni	Corso di Laurea Magistrale in Medicina e Chirurgia (2019)	comune	13	BIO/16, BIO/16

Stampa del 06/05/2025

Human Anatomy [12011C3]

Offerta didattica a.a. 2024/2025

Docenti: SIMONE CAROTTI

Periodo: Secondo Ciclo Semestrale

L'attività didattica è offerta in:

Facoltà Dipartimentale di Medicina e Chirurgia

Tipo corso	Corso di studio (Ordinamento)	Percorso	Crediti	S.S.D.
Laurea Magistrale Ciclo Unico 6 anni	Corso di Laurea Magistrale in Medicina e Chirurgia (2024)	comune	4	BIO/16, BIO/16

Stampa del 06/05/2025

Biochemistry [1201205]

Offerta didattica a.a. 2024/2025

Docenti: MAURO MACCARRONE

Periodo: Ciclo Annuale Unico

Obiettivi formativi
Students should become acquainted with the basic principles of biological chemistry and molecular biology. The central goal of the course is to provide students with a method of critical reasoning about the clinical aspects of Medicine, based on knowledge of the molecular mechanisms that form its basis. To achieve this goal, special emphasis is placed on the overview of metabolic pathways and their mutual interrelationships, especially at the level of individual tissues and organs. The student will thus have a clear sense of the impact that alteration of one pathway or specific regulation can have on others related to it.

Prerequisiti
According to the terms of the course, the only required prerequisite is passing the Chemistry and Propedeutic Biochemistry course

Contenuti del corso
I Semester
1) The Foundations of biochemistry. 2) Water. 3) Carbohydrates and glycobiology. 4) Lipids and biological membranes. 5) Nucleotides and nucleic acids. 6) Amino acids, peptides and proteins 7) The three-dimensional structure of proteins. 8) Protein function. 9) Haemoproteins and oxygen transport. 10) Enzymes and inhibitors. 11) Glycolysis, gluconeogenesis and the pentosephosphate pathway. 12) Principles of metabolic regulation. 13) The citric acid cycle. 14) Fatty acid catabolism. 15) Amino acid oxidation and the production of urea
II Semester
Bioenergetics and biochemical reactions. 2) Oxidative phosphorylation. 3) Carbohydrate biosynthesis. 4) Lipid biosynthesis. 5) Biosynthesis of aminoacids, nucleotides, and related molecules 6) Hormonal regulation and integration of mammalian metabolism. 7) Oxidative stress 8) Vitamins and biochemistry of nutrition. 9) Biochemistry of the gastro-intestinal system. 10) Biochemistry of the liver. 11) Biochemistry of adipose tissue. 12) Biochemistry of muscle tissue. 13) Biochemistry of nervous tissue. 14) Biochemistry of bone tissue. 15) Biochemistry of the kidney. 16) Biochemistry of cancer.

Metodi didattici
The course is delivered through frontal lectures. It also includes the analysis of "scientific cases" on specific topics, as an opportunity to deepen and apply biochemical knowledge and professional skills, consistent with the training objectives.

Modalità di verifica dell'apprendimento
The exam consists of a multiple-choice written test (30 questions) on the entire program and an oral test which can be accessed after passing the written test (minimum score 18/30).
The choice of the multiple answer aims to verify the ability to identify the key aspects of each topic while the oral test, which is compulsory, aims to ascertain the expository ability, the actual level of learning and the ability to autonomously re-elaborate the knowledge and skills described in the training objectives.
On this basis, the final evaluation in thirtieths will derive from the evaluation of a preparatory written test (to be passed with a mark greater than or equal to 18/30) and a subsequent oral test that will determine the final grade.
A bonus (0-3 points) to be added to the final grade for presenting an in-depth study with a ppt presentation during the course.

Testi di riferimento
Fondamenti di Biochimica di Lehninger di David L. Nelson & Michael M. Cox. Ed. Zanichelli
Fondamenti di biochimica Umana di M Maccarrone. Ed Zanichelli

Altre informazioni

Knowledge and understanding
The student will have to acquire a good knowledge and understanding of the main biological macromolecules, the structure and function of oxygen transporters and that of metabolic enzymes and their regulation, from the molecular and cellular level to that of organs, tissues and systems.
Applying knowledge and understanding
The student will have to acquire skills and competencies aimed at being able to translate the theoretical information and operational skills acquired in the field of biochemistry to the scientific and technological contexts of the medical profession. The student will be able to appreciate the professional applications deriving from the knowledge of biochemistry.

L'attività didattica è offerta in:

Facoltà Dipartimentale di Medicina e Chirurgia

Tipo corso	Corso di studio (Ordinamento)	Percorso	Crediti	S.S.D.
Laurea Magistrale Ciclo Unico 6 anni	Corso di Laurea Magistrale in Medicina e Chirurgia (2019)	comune	16	BIO/10, BIO/11, BIO/10

Stampa del 06/05/2025

Biology and Genetics [1201104]

Offerta didattica a.a. 2024/2025

Docenti: FRANCESCA ZALFA

Periodo: Secondo Ciclo Semestrale

Obiettivi formativi

The integrated course of Biology and Genetics aims to provide students with the knowledge and understanding of:
- the structure and the general organization of biological units and their reciprocal interactions;
- the constructive logic of the fundamental biological structures at the different levels of the living organisms and the general principles that govern the functioning of the biological units;
- the cellular processes common to all living beings: the mechanisms of expression and regulation of genetic information at the cellular and molecular level, the cellular reproduction mechanisms and the factors of intraspecific variability;
- the mechanisms of genetic information transmission in families and in the population; the role of genetics in medicine;
- the logic of the principles that govern the diversification of biological units, their characteristics of internal structuring and functional compartmentalization and their modality of genetic information expression, both longitudinally, along the evolutionary history, and among the different districts of each single individual (differentiation).
- some molecular biology and genetic techniques applicable in the clinical-diagnostic field.

Prerequisiti

There is no prerequisite for this IC, but basic knowledge of chemistry, organic chemistry and biochemical are required.

Contenuti del corso

Biology:
- Introductory concepts: General characteristics of living beings and their classification.
- The cell and cellular organelles: Cell theory. Molecular interactions in biological structures. Prokaryotic cell and eukaryotic cells.
- DNA replication and repair.
- Complexity of the eukaryotic genome: highly repeating DNA, medium repeating DNA and single sequence DNA.
- Gene expression: from transcription to translation. RNA (structure and function). Transcription in prokaryotes and eukaryotes. Maturation of rRNAs, tRNAs, mRNAs, microRNAs and piRNAs. Genetic code and protein synthesis.
- Regulation of gene expression.
- Post-synthetic fate of proteins: Import of proteins into the RER, mitochondria, chloroplasts and nucleus. Protein maturation. Exocytosis and endocytosis.
- Cytoskeleton and cellular mobility: Microfilaments, intermediate filaments and microtubules. Motor proteins (myosins, kinesins and dyneins).
- Cell division: Cell cycle and its regulation. Mitosis and Meiosis.
- Signal transduction: cell signaling and main signal transduction pathways. Apoptosis.
- Molecular basis of cancer.

Genetics:
- Correlation between genotype and phenotype: types of mutations in DNA (synonym, missense, nonsense, frameshift). Dominance, recessivity and codominance.
- Family transmission of monofactorial traits: Autosomal, dominant and recessive inheritance. Dominant and recessive X-linked inheritance.
- Exceptions to the Mendelian heritage: Incomplete penetrance, variable expressiveness and genetic heterogeneity. The hypothesis of Mary Lyon. Constitutional and acquired genomic imprinting.
- Population genetics: Gene and genotype frequencies in the population. Hardy-Weinberg equilibrium. Evolutionary forces.
- Multifactorial traits and complex diseases: Genetics of quantitative traits. Association studies with molecular markers for the identification of susceptibility genes.
- The genetic load in human pathologies and the new culture of "OMICA".
- Genetic determination of sex and related diseases: genes on the Y chromosome.
- Applications of genetic engineering in medicine: strategies for the identification of disease-genes, practical utility of linkage analysis, in vivo and in vitro models of human diseases.

- Genomic disorders and duplicons: segmental aneusomies and haploinsufficiency.
- Genetic counseling and genetic examination: the role of the geneticist.
- The human karyotype and its numerical and structural anomalies: Chromosome classification criteria and banding methods. Normal and pathological human karyotype. Robertsonian translocations. Variations in the number of chromosomes: trisomies and monosomies.
- The constitutional syndromes of predisposition to hereditary neoplasms.

Metodi didattici

The course is carried out by means of lectures and problem solving exercises with the whole class, for both courses, divided as follows:
Biology
- 80 hours of face-to-face lessons.
- 7 hours of exercises

Genetics:
- 53 hours of face-to-face lessons.
- 10 hours of exercises

Furthermore, didactic materials are available on UCBM e-learning platform (power-point with integrated voice comments, videos, animations, etc.) and, upon request, there are also hours of tutoring and guided study with teachers or discipline tutors.

Modalità di verifica dell'apprendimento

The exam consists of a written test of Biology and Genetics and an oral test of Biology (optional).
In exceptional cases, if irregularities are found or suspected in during the written test, teachers may make the oral test mandatory (in both Biology and Genetics) for such students.

Written tests contain 3 different types of questions:
- multiple choice questions, aimed at verifying the acquisition and knowledge of the aforementioned topics.
- problem solving, aimed at verifying the ability to apply the acquired knowledge and skills and the logic of the basic unitary principles for solving simple biological and/or genetic problems.
- open-ended questions, aimed at verifying the ability of analysis and synthesis and the ability to connect knowledge in a logical and coherent way for the production of a correct and complete manuscript.

The oral exam of Biology, in addition to evaluate the previously described aspects of learning, is also aimed at verifying the clarity of presentation and language properties.
The assessment of learning involves the attribution of a final vote expressed out of thirty (plus possible laud) and this attribution takes into account the two written tests and the oral test, based on the following criteria:
Written test of Biology: 10 multiple choice or problem solving questions (1 point each, 0 points for wrong or blank answers) and 2 open-ended questions (up to 10.5 points each).
Written test of Genetics: 31 problem solving questions (1 point each, -1 points for wrong answers, no penality for not answered questions).
Oral exam: 3 questions (up to 10 points each).

For the attribution of the aforementioned scores, is taken into consideration:
For multiple choice questions:
- the correctness of the answer (100%) For problem solving questions:
- the logic followed by the student in solving the problem (50%)
- the correctness of the procedure identified for solving the problem (50%) For open-ended questions and for the oral exam:
- the adequacy and relevance of the answer in relation to the skills that the student is expected to have acquired at the end of the course (40%)
- the correctness of the answer (30%)
- the ability to connect information logically and consistently (20%)
- the use of appropriate language (10%)

The final vote is attributed by arithmetic mean between:
- average vote of the two written tests (weighted for the CFU) - weight 50%
- vote of the oral test - weight 50%

The exam is not considered passed if the vote is lower than 18/30.

To achieve a score equal to or greater than 28/30, the student must demonstrate an optimal knowledge of all the topics of the IC, being able to connect them in a logical and coherent way, while “the laud” corresponds to an excellent preparation with a final grade above 30/30.

Testi di riferimento

Reference books
BIOLOGY: Iwasa e Marshall, “Biologia Cellulare e Molecolare di Karp”, EDISES.
GENETICS: Thompson & Thompson, “Genetica in Medicina”, Nussbaum, McInnes, Willard, IDELSON-GNOCCHI.

For further information
BIOLOGY:
Cooper- Hausman, “La cellula : Un approccio molecolare”, PICCIN.
Alberts e autori vari, “Biologia molecolare della cellula”, ZANICHELLI.
GENETICS:
Michael R. Cummings, “Eredità principi e problematiche della genetica umana”, EDISES.
B. Porfirio, “Genetica Umana (1000 esercizi a risposta multipla)”, EDISES.
Neri G., Genuardi M., “Genetica Umana e Medica”, EDRA.

Additional didactic materials will be provided during the IC.

Altre informazioni
Knowledge and understanding
• Know and understand the general principles of biology and genetics.
• Applying knowledge and understanding
- Ability to apply knowledge for solving simple biological and genetic problems.
- Ability to apply the experimental method to the study of fundamental biological and genetic phenomena.
- Ability to develop logical procedures and strategies that allow to perform precise and documented observations and to make a correct critical analysis in order to deduce generalizable principles.
- Ability to assess the risk of recurrence of genetic diseases in families.

L'attività didattica è offerta in:

Facoltà Dipartimentale di Medicina e Chirurgia

Tipo corso	Corso di studio (Ordinamento)	Percorso	Crediti	S.S.D.
Laurea Magistrale Ciclo Unico 6 anni	Corso di Laurea Magistrale in Medicina e Chirurgia (2024)	comune	12	BIO/13, BIO/13

Stampa del 06/05/2025

Chemistry and Biochemistry Introduction [1201102]

Offerta didattica a.a. 2024/2025

Docenti: FILOMENA FEZZA

Periodo: Primo Ciclo Semestrale

Obiettivi formativi
The course aims to provide the concepts of general chemistry and organic chemistry fundamental to the study of biochemistry, physiology and pharmacology and acquire the basic tools necessary for interpretation of biological phenomena.

Prerequisiti
Basic knowledge of mathematics and physics.

Contenuti del corso
General and inorganic chemistry
Atoms and molecules: the quantum theory, the periodic table and the electronic configuration. Chemical bonds: ionic, covalent, inorganic nomenclature, electronegativity, polar and non polar bonds.
Chemistry reactions: mole, stoichiometry, types of reactions.
State of matter: properties of gases, intermolecular forces, liquid, solid, status transitions and energy. The state diagram of the water.
Solutions: concentrations %w/w, %w/v, %v/v, M, m, solubility, colligative properties.
Chemical thermodynamics: first law of thermodynamics, internal energy, second law of thermodynamics; definition of entropy, Gibbs free energy: definition, concept of spontaneity.
Kinetic theory: concept, rate equations, reaction order, energy of activation, catalysis.
Chemical equilibrium: law of chemical equilibrium, Kp and Kc, effect on the equilibrium of pressure, temperature, concentrations, the principle of Le Chatellier.
Equilibrium solubility: solubility of the compounds, ionic equations, Kps.
Acids and bases: Arrhenius, Brønsted-Lowry and Lewis definition, weak and strong acids and bases, amphoteric. hydrolysis, neutralization, pH, titrations, buffers, bicarbonate and phosphate buffers.
Nuclear chemistry: radioactivity, decay time, clinical applications.
Propaedeutic biochemical
Organic chemistry: aliphatic and aromatic hydrocarbons, halogen derivatives of hydrocarbons, alcohols and polyols, thiols, ethers, thioethers, amines, aldehydes, ketones, carboxylic acids and esters. Fatty acids, triglycerides, phospholipids, steroids, amino acids, peptide bond, notes on protein structure. Heterocyclic compounds, purine and pyrimidine bases, nucleosides, nucleotides and nucleicacids. Optical stereoisomerism. Organic reactions and mechanisms of the major organic reactions.

Examination procedure:
Compulsory written examination and oral examination on request.

Metodi didattici
The course is delivered through lectures (75%) and classroom exercises (25%). Classroom lectures are used to acquire the theoretical knowledge necessary for the degree program and constitute the main form of educational activity. Classroom exercises consist of performing exercises in class and aim to reinforce and stabilize the notions learned during the lectures. Their purpose is to train students to apply theoretical concepts to problem-solving.

Modalità di verifica dell'apprendimento
The exam consists of a written test with 31 multiple-choice questions followed by an oral exam. The two tests aim to ascertain the actual level of learning and the ability to independently re-elaborate the acquired knowledge. The grade will not be the average of the scores of the two tests but will reflect the demonstrated knowledge.

Testi di riferimento
Chimica generale:
• N. J. TRO, Chimica un approccio molecolare, EdiSES.

Propedeutica biochimica:
• W.H. Brown, M.K. Campbell, S.O. Farrell, EdiSES

Chimica e propedeutica biochimica
Di Ilio - Lanzalunga - Maccarrone - Speranza, Edizioni A.L.E

Altre informazioni

Knowledge and Understanding
Knowledge and understanding of the general principles of chemistry:

Ability to apply knowledge to solve problems of a chemical and biochemical nature.
Ability to understand the correlation between the electronic structure of atoms and molecules, both inorganic and organic, and their chemical properties.
Ability to link chemical nomenclature to the corresponding structural formula.
Ability to describe the properties of macromolecules of biological and pharmacological interest.
Ability to Apply Knowledge and Understanding
The student must be able to apply the knowledge acquired in the exercises. The ability to apply knowledge and understanding will be achieved through classroom exercises.

L'attività didattica è offerta in:

Facoltà Dipartimentale di Medicina e Chirurgia

Tipo corso	Corso di studio (Ordinamento)	Percorso	Crediti	S.S.D.
Laurea Magistrale Ciclo Unico 6 anni	Corso di Laurea Magistrale in Medicina e Chirurgia (2024)	comune	7	BIO/10

Stampa del 06/05/2025

Chirurgia Generale [12015C1]

Offerta didattica a.a. 2024/2025

Docenti: ROBERTO COPPOLA

Periodo: Secondo Ciclo Semestrale

Syllabus non pubblicato dal Docente.

L'attività didattica è offerta in:

Facoltà Dipartimentale di Medicina e Chirurgia

Tipo corso	Corso di studio (Ordinamento)	Percorso	Crediti	S.S.D.
Laurea Magistrale Ciclo Unico 6 anni	Corso di Laurea Magistrale in Medicina e Chirurgia (2019)	comune	2	MED/18

Stampa del 06/05/2025

Surgery and Dentistry [1201606]

Offerta didattica a.a. 2024/2025

Docenti: ROBERTO COPPOLA, LEONE D'AVERSA

Periodo: Primo Ciclo Semestrale

Syllabus non pubblicato dal Docente.

L'attività didattica è offerta in:

Facoltà Dipartimentale di Medicina e Chirurgia

Tipo corso	Corso di studio (Ordinamento)	Percorso	Crediti	S.S.D.
Laurea Magistrale Ciclo Unico 6 anni	Corso di Laurea Magistrale in Medicina e Chirurgia (2019)	comune	8	MED/18, MED/28, MED/18

Stampa del 06/05/2025

Clinical dermatology [1201511]

Offerta didattica a.a. 2024/2025

Docenti: PAOLO PERSICHETTI, VINCENZO PANASITI

Periodo: Primo Ciclo Semestrale

Obiettivi formativi

The course focuses on the main concepts of dermatology and plastic surgery that can be relevant for every medical doctor.
During the course, the students would learn epidemiology, pathophysiology and major pathologic features of the most common and important cutaneous diseases; how to explain therapeutic strategy after diagnosis and they would acquire the basic principles of plastic surgery to manage post trauma, malformation or oncological reconstruction as well as cosmetic procedures
The student must achieve the following goals:
1) The ability to describe the probable pathogenesis of the cutaneous symptoms (itching, paresthesia, hyperesthesia, burning, pain).
2) The ability to describe the clinical approach (anamnesis and physical examination) in patients with skin and venereal diseases (with adequate terminology regarding the primary skin lesions).
3) The ability to describe etiology, physiology, laboratory findings, anatomo-clinical correlation, complications and treatment of the following conditions: erythematous, pomphoid, papular, vesicular, pustular, bullous, nodular, atrofic, ulcerated, gangrenous diseases.
4) The ability to identify non-pigmented and pigmented neoplastic lesions.
5) The ability to identify iatrogenic skin lesions, skin lesions in internal medicine and sexually transmitted diseases (e.g. gonococcal infection, syphilis).
6) To know the stages of wound healing.
7) To Indicate the basic techniques and principles in plastic surgery.
8) To describe the etiology, clinical and treatment options in burns injuries.
9) To explain the principal congenital anomalies, oncological and post traumatic pathologies that may require reconstructive surgery.
10) To describe the principles of the cosmetic surgery.

Prerequisiti

Students must have completed all exams of the 3rd year
Good knowledge of normal human anatomy, anatomical pathology and human physiology is mandatory.

Contenuti del corso

Dermatology
- Anatomy and physiology of the skin.
- Elementary lesions.
- Viral, bacterial and fungal infections.
- Basic skin immunology.
- Autoimmune skin disorders.
- Dermatomyositis, scleroderma.
- Pemphigus, bullous pemphigoid, dermatitis herpetiformis, herpes gestationis.
- Discoid lupus erythematosus, lupus erythematosus, subacute cutaneous lupus.
- Professional dermatitis, eczema, allergic contact dermatitis and irritative contact dermatitis, atopic eczema.
- Urticaria and angioedema.
- Ichthyosis.
- Psoriasis.
- Basal cell carcinoma and squamous cell carcinoma.
- Kaposi''s sarcoma, cutaneous lymphomas.
- Nevi and melanomas.
- Sexually transmitted diseases: prevention, diagnosis and therapy.
- Syphilis, gonorrhea and HIV.
- Neurocutaneous diseases at glance.

Plastic Surgery
- Wound healing.
- Skin Grafts.

- Cutaneous, fascio-cutaneous, myo-cutaneous and muscular flaps.
- Techniques and principles in plastic surgery: Z plasty, V-Y advancement etc.
- Burn injuries.
- Congenital anomalies.
- Breast reconstructions.
- Principles of cosmetic surgery

Metodi didattici

Oral exam
The student should answer to 2 questions about Dermatology and 1 question on Plastic Surgery
The final evaluation would result from both examiners scores.
Estimated time: 40 minutes

Modalità di verifica dell'apprendimento

Practical sessions will focus on clinical cases presentations. Students will be divided into groups to participate at the weekly interdisciplinary meeting on melanoma e non melanoma skin cancer
Teachers for practical sessions: Vincenzo Panasiti (Dermatology), Stefania Tenna (Plastic Surgery)
The final evaluation will be expressed in a numeric scale from 0 to 30
Basic knowledge of both disciplines is required in order to pass the exam

Testi di riferimento

Dermatology:
- M. Pippione et al., Dermatologia e Venereologia, III° Edizione Ed. Minerva Medica
- Testo atlante di dermatologia clinica II Edizione A. Du Vivier - Utet
- Textbook of Dermatology, Sixth Edition, Arhur Rook, Blackwell Scientific Publications
- Jean-Hilaire Saurat e coll. "Dermatologia e malattie sessualmente trasmesse " Ed EDRA

Plastic Surgery:
- N. Scuderi, Chirurgia Plastica, Piccin Editore
- Grabb and Smith's Plastic Surgery settembre 2013 Edizione Inglese di M.D. Thorne, Charles H. (a cura di), M.D. Chung, Kevin C.
- Cervelli-Longo. Chirurgia Plastica Ricostruttiva ed estetica. Pacini Editore
- DVD: Chirurgia Plastica Ricostruttiva ed Estetica; Santanelli F., Scuderi N. Edizioni Luigi Pozzi.

L'attività didattica è offerta in:

Facoltà Dipartimentale di Medicina e Chirurgia

Tipo corso	Corso di studio (Ordinamento)	Percorso	Crediti	S.S.D.
Laurea Magistrale Ciclo Unico 6 anni	Corso di Laurea Magistrale in Medicina e Chirurgia (2019)	comune	5	MED/19, MED/35, MED/35, MED/19, MED/35

Stampa del 06/05/2025

Clinical medicine and geriatrics [1201605]

Offerta didattica a.a. 2024/2025

Docenti: RAFFAELE FRANCO ANTONELLI INCALZI

Periodo: Primo Ciclo Semestrale

Syllabus non pubblicato dal Docente.

L'attività didattica è offerta in:

Facoltà Dipartimentale di Medicina e Chirurgia

Tipo corso	Corso di studio (Ordinamento)	Percorso	Crediti	S.S.D.
Laurea Magistrale Ciclo Unico 6 anni	Corso di Laurea Magistrale in Medicina e Chirurgia (2019)	comune	8	MED/09, MED/09, MED/09

Stampa del 06/05/2025

Clinica medica e geriatria [1201515]

Offerta didattica a.a. 2024/2025

Docenti: RAFFAELE FRANCO ANTONELLI INCALZI

Periodo: Secondo Ciclo Semestrale

Syllabus non pubblicato dal Docente.

L'attività didattica è offerta in:

Facoltà Dipartimentale di Medicina e Chirurgia

Tipo corso	Corso di studio (Ordinamento)	Percorso	Crediti	S.S.D.
Laurea Magistrale Ciclo Unico 6 anni	Corso di Laurea Magistrale in Medicina e Chirurgia (2019)	comune	3	MED/09, MED/09, MED/16

Stampa del 06/05/2025

Neuropsychiatric clinic [1201512]

Offerta didattica a.a. 2024/2025

Docenti: VINCENZO DI LAZZARO

Periodo: Secondo Ciclo Semestrale

Obiettivi formativi

The aim of the course is to provide students with the knowledge of physiopathology, clinical manifestations and diagnostic criteria of nervous system disorders encompassing the disciplines of neurology, neurosurgery, and psychiatry. Moreover, it will provided basic knowledge relative to medical and surgical treatment of neurological disorders.

Prerequisiti

The satisfactory acquisition of knowledge and understanding of this integrated course requires a good knowledge of anatomy and physiology of the nervous system. However, there are no prerequisites..

Contenuti del corso

The course is structured as frontal teaching with Neurology and Neuropsychology, Neurosurgery, Psychiatry, and Paediatric Neuropsychiatry lectures.

Neurology and Neuropsychology
History and neurological examination. Cranial nerves: semiology and main syndromes. Motor syndromes: semiology and main syndromes. Sensory syndromes: semiology and main syndromes.
Deep and superficial reflexes: diagnostic significance. Neuro-otology: vertigo, dizziness, spinocerebellar syndromes. Cortical functions and related deficits. Disorders of consciousness, coma and brain death.
Neurophysiological tests (EEG, EMG, evoked potentials), Lumbar puncture: indications and contraindications, Neuroradiological exams (CT, MRI, Angiography and PET), Classification of seizures, epilepsies and epileptic syndromes, Cerebrovascular diseases: hemorrhage and cerebral ischemia, Dementias, Demyelinating diseases, Parkinson's disease, parkinsonian syndromes, dystonia, chorea, Motor neuron diseases, Myelopathies, Encephalitis and meningitis, Peripheral nerve compression syndromes, Polyneuropathies, Myopathies and Muscular disorders, Myasthenia gravis and myasthenic syndromes, Headache syndromes: clinical pictures and differential diagnosis, Diagnosis and treatment of neurological emergencies (intracranial hypertension, stupor and coma, acute spinal compressions, status epilepticus, acute meningoencephalitis, haemorrhages, acute visual impairment), Sleep disorders.

Neurosurgery
Intracranial hypertension. Definition of Intracranial System. Concept of "intracranial compliance" Concept of "cerebral self-regulation". Therapy of intracranial hypertension.
Cranio-cerebral trauma. Evaluation of post-traumatic neurological status. Coma state. Assistance and treatment of "severe" cranial trauma. Early complications of cranial trauma (hematomas, etc.). Late complications (hydrocephalus, epilepsy, etc.).
Cerebrovascular diseases of neurosurgical interest. Subarachnoid hemorrhage and intracranial aneurysms. Arteriovenous malformations. Cavernous angiomas. Primary intracerebral hemorrhages.
Neoplastic Pathology of the Central and Peripheral Nervous System. Benign intracranial tumors (diagnosis and anatomic pathology). Primitive and secondary malignant intracranial tumors (pathological diagnosis and anatomy). The surgical treatment of intracranial neoplasms (including the prospects offered by the use of new technologies). Notes on complementary therapies (radiation, chemotherapeutic, genetic).
Expansive pathology of the diencephalo-pituitary region (pituitary adenoma and other non-neoplastic pathology). Anatomy and physiology of the diencephalo-pituitary region. Pituitary adenomas and trans-nasal approaches. Other neoplastic and non-neoplastic pathologies. Neurological syndromes of this region. Benign endocranial hypertension and "empty sella". Hydrocephalus. The genesis of various types of hydrocephalus and their treatment. The circulation of CSF. The obstructive hydrocephalus. The normal pressure hydrocephalus. The child's hydrocephalus.

Psychiatry
General Psychopathology, Schizophrenia Spectrum Disorders, Unipolar, Depression and Anxiety Disorders, Bipolar Disorder, Personality Disorders, Autism Spectrum Disorders, PTSD and Dissociative Disorders, Dual Diagnosis and Addiction, Eating Disorders

Paediatric Neuropsychiatry

Normal development
Autism spectrum disorders
Intellectual disability
Inherited neuropsychiatric disorders
Cerebral palsy
Anxiety and depression in child
Language development disorders
Attention deficit hyperactivity disorder

Metodi didattici

The course will include frontal lessons, case-based teaching and problem-based learning with presentation of videos of patients. The course is composed of 125 hours of frontal teaching (62.5 hours Neurology, 37.5 hours Psychiatry, 12.5 hours Neurosurgery, 12.5 hours Pediatric Neuropsychiatry). Small groups supervised clinical training will take place in the neurology ward and in the day Hospital and outpatient clinic of neurology and psychiatry.

Modalità di verifica dell'apprendimento

Learning assessment will be performed regularly throughout the course by interactive discussion of clinical cases and multiple choice questionnaires. Students who will complete 60% of this assessment activity will be admitted to oral examination directly. The results this assessment will not be considered to calculate the final grade because its objective is the learning reinforcement and providing a feedback to teachers about learning progress. Students who will complete less than 60% of this assessment activities should pass a written test represented by a 15 questions multiple choice questionnaire in order to be admitted to the oral examination (to pass at least 12 correct answers are required)
The objective of oral examination is threefold: 1) to test the level of knowledge of clinical manifestations, diagnostic tests and treatment of neurological, psychiatric and neurosurgical disorders presented during the course; 2) to assess the critical thinking about neurological disorders by discussing differential diagnosis and atypical presentations; 3) to assess the capability of presenting acquired contents of the course in a clear and precise way. The final grade will be defined taking into consideration all these elements and the minimum score to pass the oral exam is 18/30.

Testi di riferimento

Suggested textbooks:

Neurology
Setun A. Neurologia di Fazio Loeb. Quinta Edizione. Società Editrice Universo
- Berardelli A., Cruccu G., La neurologia della Sapienza, Terza edizione, Edizioni Esculapio
- Ladavas E., Berti A. Neuropsicologia. Terza edizione, Il Mulino
- Colosimo C., Neuroradiologia, Casa editrice Edra

Neurosurgery:
- Staffa G. Elementi di Neurochirurgia. Timeo Editore

Psychiatry
- A. Siracusano (Ed.) 2014 Manuale di Psichiatria, Roma, Pensiero Scientifico.

Pediatric Neuropsychiatry
Neuropsichiatria infantile - Autori: Militerni Editore: Idelson - Gnocchi Volume: Unico Edizione: V 2015

Altre informazioni

Knowledge and comprehension
The course enables students to acquire knowledge and understanding about diagnosis, treatment and prevention of neurological disorders involving central and peripheral nervous system. Regarding disorders that can be treated neurosurgically, knowledge of indications to surgery and main surgical procedures is acquired. Knowledge of diagnosis, treatment and prevention of psychiatric disorders together with legal issues will be acquired. The knowledge of essential psychopharmacology will be acquired.
Knowledge of diagnosis and treatment of main pediatric neurospychiatric disorders will be acquired.
Applying knowledge and understanding
At the end of the course the student will learn how to take medical history and how to perform clinical evaluation of patients with neurological and psychiatric disorders. The student will be able to manage the diagnostic and therapeutic care pathway for the main neurological and psychiatric disorders. Finally the student will develop teamwork skills useful for the management of neurological and psychiatric disorders.

L'attività didattica è offerta in:

Facoltà Dipartimentale di Medicina e Chirurgia

Tipo corso	Corso di studio (Ordinamento)	Percorso	Crediti	S.S.D.
Laurea Magistrale Ciclo Unico 6 anni	Corso di Laurea Magistrale in Medicina e Chirurgia (2019)	comune	12	MED/27, MED/39, MED/26, MED/26, MED/25

Stampa del 06/05/2025

Diagnostic imaging [1201415]

Offerta didattica a.a. 2024/2025

Docenti: BRUNO BEOMONTE ZOBEL

Periodo: Ciclo Annuale Unico

Syllabus non pubblicato dal Docente.

L'attività didattica è offerta in:

Facoltà Dipartimentale di Medicina e Chirurgia

Tipo corso	Corso di studio (Ordinamento)	Percorso	Crediti	S.S.D.
Laurea Magistrale Ciclo Unico 6 anni	Corso di Laurea Magistrale in Medicina e Chirurgia (2019)	comune	7	MED/36, MED/36, MED/36

Stampa del 06/05/2025

Clinical and surgical emergencies: anesthesia and resuscitation [1201609]

Offerta didattica a.a. 2024/2025

Docenti: FRANCESCO STILO, FELICE EUGENIO AGRO', MASSIMILIANO CARASSITI, ROSETTA MELFI, MASSIMO CHELLO

Periodo: Secondo Ciclo Semestrale

Obiettivi formativi
The aim of the course is to provide the student with the basis for an integrated knowledge of Cardiovascular and Medical pathologies and of anesthetic and resuscitation techniques in an emergency setting, starting from genetic and non-genetic risk factors, from clinical presentation and diagnostic procedures, up to the therapeutic availables strategies (pharmacological, surgical and endovascular, as well as resuscitation techniques and general and loco-regional anesthesia) and the predictive and prognostic factors of the efficacy of the treatments, as well as the management of the patient in emergency-urgency. Provide the basis for understanding the methods and principles of therapy to be implemented in the specific pathologies of critically ill patients in emergency medicine. To make known the causes of alteration of the vital parameters of the most important organs and systems, making the correlation between physiology, pathology and diagnostic-therapeutic intervention in emergency and urgency. Provide the basis for understanding the principles of anesthesiology In particular, the course aims to provide students with an integrated and multidisciplinary vision in the approach to the Cardiovascular patient and the critically ill patient.

Prerequisiti
According to the Regulations of the Degree Program, no prerequisites are envisaged.

Contenuti del corso
The program will be divided into lectures (on specific topics of Cardiovascular Surgery, Cardiological Emergencies, Intensive and Resuscitative Therapy) and integrated lessons in which Cardiovascular and resuscitation pathologies will be addressed in a multidisciplinary manner through the presence of several teachers in the classroom. The integrated lessons will also be enriched by the presentation of clinical cases and during these lessons anonymous learning tests will be performed through real-time questionnaires carried out in the classroom (Mentimeter)

For each lesson the following aspects will be addressed:
1. Risk factors predisposing to cardiovascular and respiratory diseases, together with the genetic factors associated with
2. Clinical presentation of cardiovascular diseases and states of emergency
3. Main diagnostic procedures and principles of screening
4. How to interpret the radiological, biochemical investigations and electrophysiological and blood gas analytical findings specific for each pathology
5. Main predictive and prognostic factors of Cardiovascular pathology
6. Principles of treatment and main guidelines for daily clinical practice
7. Principles of an integrated approach in Cardiovascular, Respiratory and Multiorgan failure
8. New frontiers in the treatment of Cardiovascular therapies: minimally invasive and biological therapy.
9. Interpretation of clinical trials and principles of clinical trial designs

ANESTHESIOLOGY, RESUSCITATION AND PAIN THERAPY
The control of the airways in an emergency. (Prof Agro ')
Cannot Intubate Cannot Ventilate: the role of supraglottic devices in emergency emergencies (Prof Agro ') Body fluid management: colloids and crystalloids (Prof Agro ')
Neuromuscular Curarization and Monitoring (Prof Agro ')
Politrauma (Prof Agro ')
BLSD (Prof Agro' – Lavorante, MD)
Principles of anesthesia - Emergency trolley - monitoring (Prof. Agro'- Prof. Cataldo)
ACLS (Prof Agro' – Lavorante, MD)
Pain therapy (Prof. Carassiti)
Vascular accesses (Prof Agro'- Costa, MD)
Normothermia and acid-base balance (Prof Agro ')
ATLS (Prof Agro' – Lavorante, MD)

EMERGENCY HEART SURGERY

Mechanical ventricular assistance (Prof. Chello)
Aneurysms of the aortic arch (Prof Chello)
Trauma of the chest (Prof Chello)
Pneumothorax (Prof Chello- Giacinto, MD)
Aortic dissection (Prof Chello- Prof. Lusini)
Syncope (Prof Chello- Prof. Lusini)
Cardiac tamponade (Prof Chello- Giacinto, MD)
Mechanical complications of heart attack (Prof Chello)
Pleural and pericardial effusions (Prof Chello- Giacinto, MD)
Aortic contropulsator (Prof Chello)

EMERGENCY CARDIOLOGY
Cardiogenic shock (Prof. Ussia- Melfi, MD)
Acute coronary syndromes (Prof. Ussia- Melfi, MD)
Acute pulmonary edema and cardiac tamponade (Prof. Ussia- Melfi, MD)
Acute myocardial infarction with ST segment elevation and Mechanical Complications of Heart Attack (Prof. Ussia- Melfi, MD)
Hypertensive emergencies and emergencies (Prof. Ussia- Melfi, MD)
Cardiac arrhythmias in urgency / emergency (Prof. Ussia- Melfi, MD)
Pulmonary Embolism (Prof. Ussia- Melfi, MD)

VASCULAR SURGERY
Atherosclerosis and principles of hemodynamics. (Prof. Stilo)
Clinical semiotics and instrumental diagnostics of the apparatus and vascular pathologies. (Prof. Stilo)
Acute ischemia and chronic obstructive arteriopathies of the limbs (including diabetic arteriopathy, Leriche syndrome, Buerger's disease). (Prof. Stilo- Montelione, MD)
Cerebro-vascular insufficiency (including Subclavian Steal Syndrome). (Prof. Stilo)
Acute and chronic celiac-mesenteric insufficiency. Renovascular hypertension. (Prof. Stilo)
Aortic and peripheral aneurysms. Aortic dissections. (Prof. Stilo)
Vascular trauma. (Prof. Stilo- Montelione, MD)
Venous system disorders (chronic venous insufficiency, deep vein thrombosis and pulmonary embolism). (Prof. Stilo- Catanese, MD)
Lymphatic system disorders (lymphangitis and lymphedema). (Prof. Stilo- Catanese, MD)
Thoracic outlet syndrome and compression syndromes. (Prof. Stilo- Montelione, MD)
Emergency Medicine Approach to the Patient with Chest Pain. (Prof. Stilo- Sambuco, MD- Travaglino, MD)
Emergency Medicine Approach to the Patient with Respiratory Distress. (Prof. Stilo- Sambuco, MD- Travaglino, MD)
Approach in Emergency Medicine-Urgency to the patient with acute poisoning. (Prof. Stilo- Sambuco, MD- Travaglino, MD)
Management of the patient with sepsis in Emergency Medicine. (Prof. Stilo- Sambuco, MD- Travaglino, MD)

Metodi didattici

Frontal teaching, integrated lectures, discussion of clinical cases provided for all modules with related instrumental documentation (ecg, echocardiogram, ultrasonography, CT-scan, Seldinger technique for a total of 100 hours), internship in the Polyclinic, at the Cardiology Outpatient Clinics, and the Departments of Cardiology, Cardiac Surgery and Anesthesia and Resuscitation. Internship at the Polyclinic: the internship will last 1 CFU and will aim to provide the student with a general framework on hematological and oncological diseases and provide the practical skills covered by the clinical skills (see above). The internship involves a division into groups, students will be followed by appointed Tutors who will explain the clinical and instrumental maneuvers and will follow the students during their execution. Mark out of thirty for the written test. Optional oral exam (if you want to implement the grade obtained with the written test).
The written test will consist of 80 multiple choice quizzes to be solved in 60 minutes.
The quiz will be divided as follows: 25 anesthesia and resuscitation questions, 25 emergency cardiology questions, 20 emergency cardiac surgery questions, 10 emergency vascular surgery questions.
One point will be given for each correct answer, 0.20 will be subtracted from each wrong answer. In the end the score will still be elaborated in thirtieths.
The mark of the written test is a mark weighed on the difficulty of the exam. In fact, since it is impossible, in the different exam sessions, to prepare questions of the same difficulty, in order to avoid the written tests being affected by these differences, a grade of 30/30 will be assigned to the task that obtained the best mark and all the others will undergo a correction proportionate to the correction made.
The oral test will take place immediately after the communication of the marks of the written test and it will be possible to take it only if you have obtained a mark equal to or higher than 24 out of thirty in the written test. The grade of the oral exam consists of the average of the 3 evaluations expressed by the 3 teachers / commissions.

Modalità di verifica dell'apprendimento

Practical test evaluation (clinical skills), written exam and oral exam.

The exam consists of a written and an oral test. The preparation acquired during the course will be assessed by administering a test, with equivalent questions based on the teaching modules. Within the test there will be questions of Cardiovascular pathophysiology and principles of Anesthesia and Resuscitation, there will be examples of clinical cases such as those shown in lessons or dealt with during internships, the ability of critical analysis by the learner will be tested beyond to the patient, developing the most appropriate diagnostic path. In the written test the student will have to demonstrate knowledge of the biological bases that lead to the development and progression of Cardiovascular pathology and states of emergency starting from the genetic, environmental and pathophysiological bases up to the clinical evolution of symptoms and the fundamental notions of radioogy, and the interactions between radiation and matter. Clinical cases will be included in the written test in order to assess the student's ability to coordinate the diagnostic-therapeutic process of acute patients. The oral exam consists of an oral interview based on the discussion of a clinical case through which the student will be able to demonstrate knowledge of the evolution of the disease and being able to identify the correct diagnostic path to be implemented and the different therapeutic strategies that concur to the management of the patient suffering from cardiovascular disease or in respiratory and / or multi-organ failure. To verify the knowledge and skills acquired, the teachers will also take into consideration the evaluation of the clinical tutors in the booklet of each student. During the oral exam, each student will be evaluated by 3 teachers / commissions with questions relating to the program.

Testi di riferimento

Chirurgia Vascolare: Robert R. Rutherford, Chirurgia Vascolare, Antonio Delfino Editore (Traduttore: C. Petrassi; a cura di C. Spartera), 1998, Pagine 1105, EAN: 9788872871522 ISBN: 8872871522
Guido Regina, Chirurgia Vascolare ed Endovascolare, Piccin-Nuova Libraria Editore, 2014, pagine: 300, EAN: 9788829923687 ISBN: 8829923680
Anestesiologia, Rianimazione e Terapia del dolore : F. E. Agrò, Urgenze ed Emergenze Medico Chirurgiche, Edizioni Minerva Medica, 2000
Cardiologia d'Urgenza: Braunwald, Mann, Libby, Bonow, Zipes, Tomaselli, Braunwald's Heart Disease. A Textbook of Cardiovascular Medicine, Elsevier, 11th Edition, 2018; ISBN: 9780323462990
Cardiochirurgia d'Urgenza: L. Chiariello, M. Chello et al., Trattato di Chirurgia Cardiaca. Società Editrice Universo

Slides of the lessons uploaded to e-learning on the day of the lesson, publications selected by the teacher.

Altre informazioni

Knowledge and underststanding
The integrated course of medical and surgical emergencies is characterized by a very strong vocation to know how to do. An excellent ability to manage the knowledge and skills of emergency medicine is therefore essential, in view of a multidisciplinary scenario. Learn the biological bases that lead to the development and progression of cardiovascular disease starting from the genetic, environmental (risk factors) and pathophysiological bases up to the clinical evolution of symptoms in urgency. Know the history of disease evolution and the diagnostic path to be implemented. Know the therapeutic strategies that contribute to the management of the patient suffering from cardiovascular disease, whether they are pharmacological, surgical or endovascular. Understand the basics of locoregional and general anesthesia, and the principles of resuscitation.

Applying knowledge and understanding
Apply the knowledge acquired in choosing the correct diagnostic path for the patient suffering from Cardiovascular disease. Ability to make personalized therapeutic choices for the individual patient suffering from cardiovascular disease or traumatic pathologies based on the different contribution of the various disciplines. In particular, the purpose of clinical skills is to provide adequate manual skills in the ordinary management of the polyvasculopathic patient and the patient in a state of shock (BLSD maneuvers), in addition it is possible to obtain practical transversal skills useful in the ordinary medical profession (access positioning vascular system and its management, execution and interpretation of electrocardiographic and ultrasonographic examinations, critical evaluation of the results of functional tests etc etc.).

L'attività didattica è offerta in:

Facoltà Dipartimentale di Medicina e Chirurgia

Tipo corso	Corso di studio (Ordinamento)	Percorso	Crediti	S.S.D.
Laurea Magistrale Ciclo Unico 6 anni	Corso di Laurea Magistrale in Medicina e Chirurgia (2019)	comune	12	MED/22, MED/41, MED/41, MED/41, MED/41, MED/11, MED/11, MED/11, MED/23, MED/23

Pharmacology [1201404]

Offerta didattica a.a. 2024/2025

Docenti: GIORGIO MINOTTI

Periodo: Ciclo Annuale Unico

Obiettivi formativi
The Pharmacology course aims at making the student aquainted with general and specific knowledge on Drug Development (originators, bioequivalents, biosimilars), Pharmacokinetics, Pharmacodynamics and Pharmacotherapy and fundamentals of clinical trials methodology.

Prerequisiti
Biochemistry, General Phisiology and General Pathology

Contenuti del corso
Pharmacokinetic and Pharmacodynamic Drug development and clinical trials
Sympathetic and parasympathetic systems, excitotoxicity and neurodegeneration
Neurochemistry and pharmacotherapy of behavior and movement disorders, mechanisms and treatment of addictions.
Pharmacology of inflammation Cardiovascular pharmacotherapy
Pharmacotherapy of endocrine and metabolic disorders Pharmacotherapy of respiratory diseases Antineoplastic drugs
Pharmacotherapy of bacterial, viral ad fungal infections Bioequivalent and biosimilar drugs

Metodi didattici
Frontal lectures

Modalità di verifica dell'apprendimento
The final exam will be based on two written tests at the end of each semester (first and second semester)
Each test will provide 35 questions with multiple choice answers, covering all topics of the course. The tests will be prepared to probe students' ability to show:
- adeguate knowledge to apply pharmacology principles to medical practice
- attitude to identify and communicate the risk/benefit ratio of different classes of drugs
- competence in prescribing drugs according to evidence-based medicine Topics to address in each test will be:
First semester written test
• Pharmacodynamics, pharmacokinetics and drug metabolism
• Drug development and clinical trials
• Sympathetic and parasympathetic systems
• Pharmacotherapy of behavior and movement disorders
• Pharmacology and treatment of addictions and pain
• Antimicrobial pharmacotherapy
• Drug toxicology and safety
• Bioequivalents drugs Second semester written test
• Cardiovascular pharmacotherapy
• Pharmacology of inflammation
• Pharmacotherapy of respiratory system
• Pharmacotherapy of endocrine and metabolic disorders
• Antineoplastic drugs
• Biosimilar drugs

The final evaluation (marks expressed as 30/30, w/wo honours) takes the following points into account:
- a score from 0 to 35 will be assigned for each written test, where 18/30 is the minimum score to pass the test
- to pass the exam the student needs to achieve a score of not less than 18/35 in both tests
- the final mark is obtained by the arithmetic mean of the two scores achieved in each written test
- honours can be awarded only if the student will obtain a grade ≥31 in both tests

Testi di riferimento
Slides used in academic lectures Books and Bibliography:
Katzung B.G. Farmacologia generale e clinica, XI ed; a cura del Prof. Paolo Preziosi, Piccin
Laurence L. Brunton Randa Hilal-Dandan Björn C. Knollmann Goodman & Gilman. Le basi farmacologiche della terapia, XIII ed; Zanichelli

Altre informazioni
Knowledge and Understanding
The student must demonstrate to knowledge and communication skills in:
- Pharmacokinetics and pharmacodynamics oriented to drug development and clinical practice
- Inter-individual variability in drug response
- Methodological approaches to clinical trials
- Neuropharmacology
- Pharmacotherapy of behavior and movement disorders
- Mechanisms and treatment of addictions
- Pharmacology of inflammation
- Cardiovascular pharmacotherapy
- Pharmacotherapy of endocrine and metabolic disorders
- Pharmacotherapy of respiratory diseases
- Antineoplastic drugs
- Antimicrobial pharmacotherapy Applying knowledge and understanding

The course offers selected topics aimed at developing students' ability to elaborate and communicate the risk-benefit ratio of the main classes of drugs; also, at the end of the course, the student will have the capability to prescribe drugs according to evidence-based medicine.

L'attività didattica è offerta in:

Facoltà Dipartimentale di Medicina e Chirurgia

Tipo corso	Corso di studio (Ordinamento)	Percorso	Crediti	S.S.D.
Laurea Magistrale Ciclo Unico 6 anni	Corso di Laurea Magistrale in Medicina e Chirurgia (2019)	comune	9	BIO/14, BIO/14, BIO/14

Stampa del 06/05/2025

Fisica [1201108]

Offerta didattica a.a. 2024/2025

Docenti: ALESSANDRO LOPPINI

Periodo: Primo Ciclo Semestrale

Obiettivi formativi
The course aims to provide knowledge about the fundamentals of classical mechanics, thermodynamics and electromagnetism and give a basic knowledge of physical laws. The primary learning objective is the development in the student of the ability to grasp the essential aspects of physical processes, framing them with coherent descriptive and quantitative mathematical models, with particular regards to medical applications.

Prerequisiti
Precalculus and algebra.

Contenuti del corso
- Introduction. Physical quantities, dimensional analysis and units systems. Scalar and vector quantities.
- Kinematics in one and two dimensions. Displacement, velocity and acceleration. Motion at constant acceleration. Falling body. Projectile motion.
- Single particle dynamics. Inertia principle. Mass and force. The second and third laws of motion. Inertial and non-inertial reference systems. Weight force. Constraints and contact forces. Strings and tension. Springs and elastic force. Friction forces.
- Uniform circular motion. Law of universal gravitation.
- Work and kinetic energy. Conservative forces and potential energy. Conservation of mechanical energy.
- Momentum and its relationship with force. Conservation of momentum. Collisions in one dimension.
- Rotational motion. Angular quantities. Torque. Rotational dynamics. Moment of inertia. Angular momentum and conservation of angular momentum. Static equilibrium.
- Fluids. Density and pressure. Fluid statics. Stevino's law. Archimedes' principle. Fluid dynamics: inviscid fluids and Bernoulli equation. Viscid fluids and Poiseuille's law.
- Temperature. Thermal equilibrium and zero law of thermodynamics. Ideal gas law. Heat as energy transfer. Internal energy. Specific heat. Latent heat. Calorimetry.
- First law of thermodynamics. Thermodynamic processes. Heat engines. Second law of thermodynamics: statements.
- Electrostatics. Electrified bodies and their interactions. Electric charge. Conductors and insulators. Coulomb's law. Electric field generated by discrete charge distributions. Gauss's law and electric field generated by continuous charge distributions.
- Electrostatic potential energy and electric potential. Capacitance and capacitors. Batteries. Electric currents and direct current circuits. Ohm's laws. Kirchhoff's laws. Joule effect.
- Magnetostatic. The magnetic field vector. Current-current interaction. The Lorentz force. Biot-Savart law. Field inside a solenoid. Circulation of the magnetic field and Ampère's law. Magnetic field flux. Electromagnetic induction. Lenz's law. Neumann-Faraday law. Electromagnetic waves and electromagnetic spectrum.

Metodi didattici
Theoretical and practical lectures focused on the topics of the course. Teaching methods involve frontal lectures, slides and whiteboard.

Modalità di verifica dell'apprendimento
Methods and Criteria for Learning Assessment:
Learning is assessed through a written test and an oral test aimed at verifying the student's knowledge of the theoretical and practical topics presented in the course. The written test lasts 2 hours and consists of a test of 30 multiple-choice questions, including 15 questions on theory and 15 practical problems. The oral test consists of a discussion of the written test with possible questions from the lecturer on the critical points that emerged in the written test.

Criteria for Measuring Learning and Assigning the Final Grade:
The final grade is based on the written test results and the subsequent oral discussion. In the written test, each correct answer is worth 1 point, and each incorrect answer or unanswered question is worth 0 points. The maximum score that can be achieved is 30. A minimum score of 18 is required to pass the exam. Cum Laude is awarded at

the discretion of the lecturer in the event of a full score and full mastery of the topics studied.

Testi di riferimento

- Slides and material produced by lecturers and uploaded on the e-learning platform.
- Suggested textbook: Fisica, Con fisica moderna. Douglas C. Giancoli. Casa Editrice Ambrosiana (CEA). Terza edizione. 2017.

Altre informazioni

Knowledge and understanding
Students will achieve an adequate knowledge of physical laws and related mathematical aspects on broad aspects of classical physics, including:
- Kinematics and Newtonian dynamics.
- Fluids.
- Calorimetry and thermodynamics.
- Electromagnetism.

Students will learn methodological-operational aspects of physics to interpret and describe medical problems.

Applying knowledge and understanding
At the end of the course, students will be able to correctly use theoretical knowledge to solve for practical problems. Students will be able to interpret physical laws and apply them in different fields of medicine. The ability in applying theoretical knowledge will be acquired through specific practical lectures focused on problems resolution.

Making judgments
At the end of the course, students will be able to combine the acquired theoretical knowledge and practical experience to assess and analyze physical phenomena, by making assumptions and decisions in a consistent and reasoned way.

Communication skills
Students will develop the ability to describe physical laws at different levels of detail. In particular, they will be able to use both proper technical vocabulary and calculus skills to explain physical processes and the models behind them.

Learning skills
The class will provide individual skills in learning new topics by working on the basic knowledge acquired during the lectures. Students will acquire the capacity to learn advanced details on the topics presented and to extend their knowledge on further aspects of modern physics and on medical applications.

L'attività didattica è offerta in:

Facoltà Dipartimentale di Medicina e Chirurgia

Tipo corso	Corso di studio (Ordinamento)	Percorso	Crediti	S.S.D.
Laurea Magistrale Ciclo Unico 6 anni	Corso di Laurea Magistrale in Medicina e Chirurgia (2024)	comune	3	FIS/07

Stampa del 06/05/2025

Human physiology [1201203]

Offerta didattica a.a. 2024/2025

Docenti: MARCELLO D'AMELIO

Periodo: Ciclo Annuale Unico

Obiettivi formativi

Starting from an anatomical, biochemical, biological, and physical basis, students must achieve an adequate knowledge and understanding of the main aspects of morpho-functional organization of all organs and systems of human body including the central and peripheral nervous system and the sense organs. Students have to understand the interaction between organs and systems, also with reference to the clinical relevance of their dysfunction.

Prerequisiti

Graduates must have passed examinations in Physics, Statistics, Chemistry, Biology and Genetics. Knowledge of the fundamentals of algebra and infinitesimal calculus is also required.

Contenuti del corso

Second Year - First Term

Cardiovascular system: Blood. The heart as a pump. Excitability and automaticity of the heart. Electrocardiogram. Circulatory system. Regulation of blood pressure. Physiological properties of selected circulatory districts (e.g. coronary circulation; placenta)

RESPIRATORY Spirometry. Respiratory volumes. Respiratory mechanics. Chemical regulation of breathing. Respiratory centers. Transport of O2 and CO2 in the blood.

RENAL SYSTEM AND ACID-BASE BALANCE. Kidney: filtration, reabsorption and secretion. Urine concentration. Renal clearance. Role of the kidney in the regulation of blood pressure. Role of the kidney in acid-base balance.

Second Year - Second term

DIGESTIVE SYSTEM Nutrition physiology. Enteric nervous system. Motility and secretion. Digestion and absorption. Physiology of the liver.

ENDOCRINE SYSTEM Classes of hormones. Signal transduction mechanisms. Hypothalamic-pituitary axis. Hormonal regulation of growth and development. Regulating blood glucose. Regulation of serum calcium and phosphorus. Regulating sexual function. Thyroid hormones.

NERVOUS SYSTEM Autonomic Nervous System. Principles of motor control. Motor centers: spinal cord, brain stem, motor cortex. Cerebellum. The basal ganglia. Sleep and wakefulness. Memory and learning. Sensory physiology. Special sense organs: sight, hearing, smell. Sensitivity to pain.

Metodi didattici

Theoretical lectures, in-depth seminars and tutorial meetings. During the course, guidance will also be given on how to do a bibliographic search and how to read a scientific article. Students who wish to do so have the opportunity to bring a scientific paper on a physiological topic to the oral examination.

Modalità di verifica dell'apprendimento

The ability to apply the knowledge and understanding of the main aspects of morpho-functional organization of cells , reworking them in a reasoned manner is assessed. Students are also required to graphically represent models and relations between physiological parameters and explain interactions between cells, with reference to the clinical relevance of their disfunction. Emphasis is placed on the students' communication skills and their ability to critically reformulate the learnt concepts.

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The exam is based on an oral test with questions on the topics relating to the first and second term.

Testi di riferimento

F. Conti (Editore). Fisiologia Medica. 2 Volumi. Terza edizione. Edi-Ermes, 2020.
Kurtz-Pape-Silbernagl. Fisiologia. Quarta edizione italiana (sulla base della 6. Edizione tedesca). EdiSes, 2016.
E.R. Kandel, et al. Principi di Neuroscienze. 4a Edizione Italiana. Ambrosiana, 2015

Altre informazioni

Students must know the principles of the functional organisation of a cell in the context of the function of an organ and a physiological system.
In particular, at the end of the course, the student should be able to
- know the biophysical basis of intercellular communication;
- know the biophysical basis of cell excitability and the basis of nerve transmission;
- associate the complexity of physiological systems (including the human brain) with the molecular and cellular principles identified and studied in animal and cellular models;
- present the different physiological functions and assess their potential clinical relevance;
- compare and differentiate between different methods of studying cell function and structure;

L'attività didattica è offerta in:

Facoltà Dipartimentale di Medicina e Chirurgia

Tipo corso	Corso di studio (Ordinamento)	Percorso	Crediti	S.S.D.
Laurea Magistrale Ciclo Unico 6 anni	Corso di Laurea Magistrale in Medicina e Chirurgia (2019)	comune	14	BIO/09, BIO/09

Stampa del 06/05/2025

Human physiology [12011C4]

Offerta didattica a.a. 2024/2025

Docenti: MARCELLO D'AMELIO

Periodo: Secondo Ciclo Semestrale

Obiettivi formativi
Starting from a hystology, cell biology, chemical and physical basis, students must achieve an adequate knowledge and understanding of the main aspects of morpho-functional organization of cells (including neurons) in the context of organs and organ systems.

Prerequisiti
Graduates must have passed examinations in Physics, Statistics, Chemistry, Biology and Genetics. Knowledge of the fundamentals of algebra and infinitesimal calculus is also required.

Contenuti del corso
Cell Physiology: Internal milieu and homeostatic control mechanisms. Diffusion and transport through membranes. Membrane potential. Action potential. Synaptic transmission. Muscle contraction.

Metodi didattici
Theoretical lectures, in-depth seminars and tutorial meetings. During the course, guidance will also be given on how to do a bibliographic search and how to read a scientific article. Students who wish to do so have the opportunity to bring a scientific paper on a physiological topic to the oral examination.

Modalità di verifica dell'apprendimento
The ability to apply the knowledge and understanding of the main aspects of morpho-functional organization of cells , reworking them in a reasoned manner is assessed. Students are also required to graphically represent models and relations between physiological parameters and explain interactions between cells, with reference to the clinical relevance of their disfunction. Emphasis is placed on the students' communication skills and their ability to critically reformulate the learnt concepts.
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The exam is based on 30 questions and each question is awarded a mark of 1/30 (28 multiple-choice questions and 2 open-ended questions).
A result greater than or equal to 18/30 will qualify as eligibility to take the Physiology final exam to be held at the end of the second semester of the second year.

Testi di riferimento
F. Conti (Editore). Fisiologia Medica. 2 Volumi. Terza edizione. Edi-Ermes, 2020.
Kurtz-Pape-Silbernagl. Fisiologia. Quarta edizione italiana (sulla base della 6. Edizione tedesca). EdiSes, 2016.
E.R. Kandel, et al. Principi di Neuroscienze. 4a Edizione Italiana. Ambrosiana, 2015 (consigliato per approfondimenti della fisiologia del sistema nervoso)

Altre informazioni
Students must know the principles of the functional organisation of a cell in the context of the function of an organ and a physiological system.
In particular, at the end of the course, the student should be able to
- know the biophysical basis of intercellular communication;
- know the biophysical basis of cell excitability and the basis of nerve transmission;
- associate the complexity of physiological systems (including the human brain) with the molecular and cellular principles identified and studied in animal and cellular models;
- present the different physiological functions and assess their potential clinical relevance;
- compare and differentiate between different methods of studying cell function and structure;

L'attività didattica è offerta in:

Facoltà Dipartimentale di Medicina e Chirurgia

Tipo corso	Corso di studio (Ordinamento)	Percorso	Crediti	S.S.D.
Laurea Magistrale Ciclo Unico 6 anni	Corso di Laurea Magistrale in Medicina e Chirurgia (2024)	comune	3	BIO/09, BIO/09

Stampa del 06/05/2025

Clinical physiopathology, medical and surgical semiotics [1201310]

Offerta didattica a.a. 2024/2025

Docenti: ANTONIO PICARDI, UMBERTO VESPASIANI GENTILUCCI, ROSSANA ALLONI

Periodo: Primo Ciclo Semestrale

Syllabus non pubblicato dal Docente.

L'attività didattica è offerta in:

Facoltà Dipartimentale di Medicina e Chirurgia

Tipo corso	Corso di studio (Ordinamento)	Percorso	Crediti	S.S.D.
Laurea Magistrale Ciclo Unico 6 anni	Corso di Laurea Magistrale in Medicina e Chirurgia (2019)	comune	14	MED/18, MED/09, MED/18, MED/09

Stampa del 06/05/2025

Fundamentals of Anthropology and Ethics [1201107]

Offerta didattica a.a. 2024/2025

Docenti: GIAMPAOLO GHILARDI

Periodo: Ciclo Annuale Unico

Obiettivi formativi

The teaching aims to provide students with knowledge and understanding of the fundamentals of anthropology and ethics. As Aristotle reminds us, 'what falls within the realm of praxis and usefulness has no stability, nor does what falls within the realm of medicine' (Nicomachean Ethics, II, 1104a 4-9), the course will consequently address the theme of practical reasoning in its historical-theoretical coordinates, presenting some fundamental junctures of anthropology (human identity/nature, free will, rational order) and ethics (theory of action, scientific action, good and evil, moral duty and professional duty, virtue) with special focus on the subject of intellectual virtues, i.e. those intellectual and behavioural dispositions that enable the exercise of scientific and professional activities.

Prerequisiti

According to the Regulations of the Course of Studies, there is no propaedeuticity.

Contenuti del corso

The course is conducted in two semesters: the first is devoted to the study of Philosophical Anthropology; the second to Ethics.
Lessons are mostly structured according to the frontal model with strong interaction with the students.
The topics covered are grouped in logical and chronological order as follows.

I semester: Anthropology
1. Introduction to the programme. Objectives and methods
2. Truth capacity and scientific truth
3. Who is man: the question of different sciences
4. Scientific model, philosophical model
5. The notion of the dignity of the person
6. Analogue digital, an anthropological problem
7. Human, posthuman, transhuman
8. Physiognomy: the soul-body relationship
9. Biometrics: a question of meaning
10. Medical action

II semester Ethics:
1. What is Ethics
2. The virtues
3. Moral dilemmas
4. Intentions, moral object and circumstances
5. Digital ethics
6. Ethics in Medicine
7. The doctor-patient relationship
8. Free will
9. Communication Ethics
10. Death

Metodi didattici

The course includes lectures, supplemented with discussions on fundamental anthropological and ethical issues. During the course, additional study material will be distributed through the appropriate digital channels (e-learning platform), to allow for in-depth study of what has been expounded and discussed in the classroom. It will be possible, for those who wish, to draft a short critical essay (no more than 30,000 characters) on the topics addressed.

Modalità di verifica dell'apprendimento

At the end of the course, the assessment aims to ascertain that students:

• demonstrate knowledge and understanding of texts;
• are able to apply their knowledge and understanding to solve problems in the field of health and care;
• have the ability to collect and interpret data (normally in their field of study) to make independent judgments on social, scientific or ethical issues related to them;
• know how to properly communicate information, ideas, problems and solutions.
The examination will take place at the end of the second semester by means of a written test with multiple answers and may be supplemented by an interview. The examination will consist of 11 questions with multiple answers, where only one answer will be the correct one. Three points will be awarded for each correct answer; there will be no penalties for incorrect or missing answers. The examination grade will be awarded in thirtieths. Any papers written by students will form part of the assessment, the mark for which will weigh 20% in the formation of the final grade. An oral interview will be possible for those who obtain 24/30 or less. The oral interview may affect the overall grade by 3 points.

Testi di riferimento

In addition to the course notes, you will be able to consult the texts and digital material made available on the e-learning platform from time to time.
The texts that will be used during the course are:

G. Ghilardi, L'uomo analogico, Orthotes, Naples 2020.
G. Ghilardi, Ethics of scientific and technological action, Mimesis, Milan 2018.
G. Ghilardi, Il tempo delle neuroscienze, Seu, Rome, 2012.
V. Tambone, G. Ghilardi, La Mucca pazza e il Dottor Watson, filosofia e deontologia dell'agire medico, SEU, Rome 2015.

Altre informazioni

Knowledge and understanding
• Identify in the nature of the man-person and in his intrinsic ethicality the thread that unites the various scientific-disciplinary sectors of the Degree Course in Medicine and Surgery
• Acquire the fundamentals of Philosophical Anthropology necessary to realise the humanisation of medical practice
• Describe and correctly interpret the ethical principles of action

Applied knowledge and understanding
• Identifying and discussing ethical dilemmas that arise in daily practice
• To know and identify the ethical principles that characterise autonomy and responsibility in professional and social life
• Knowing and describing health-disease concepts that influence the implementation of care models
• Being able to establish relationships between ethics and biomedical sciences
• Becoming aware of how any professional and, in particular, health professional action cannot be considered ethically neutral
• Acquire the necessary knowledge to update and raise one's ethical awareness in the course of one's professional career

L'attività didattica è offerta in:

Facoltà Dipartimentale di Medicina e Chirurgia

Tipo corso	Corso di studio (Ordinamento)	Percorso	Crediti	S.S.D.
Laurea Magistrale Ciclo Unico 6 anni	Corso di Laurea Magistrale in Medicina e Chirurgia (2024)	comune	5	M-FIL/03, M-FIL/03

Stampa del 06/05/2025

Gynecology and obstetrics [1201508]

Offerta didattica a.a. 2024/2025

Docenti: ROBERTO ANGIOLI

Periodo: Primo Ciclo Semestrale

Syllabus non pubblicato dal Docente.

L'attività didattica è offerta in:

Facoltà Dipartimentale di Medicina e Chirurgia

Tipo corso	Corso di studio (Ordinamento)	Percorso	Crediti	S.S.D.
Laurea Magistrale Ciclo Unico 6 anni	Corso di Laurea Magistrale in Medicina e Chirurgia (2019)	comune	9	MED/40, MED/40, MED/40

Stampa del 06/05/2025

Prevention hygiene and public health [1201603]

Offerta didattica a.a. 2024/2025

Docenti: TOMMASANGELO PETITTI, MASSIMO MAZZILLI

Periodo: Ciclo Annuale Unico

Obiettivi formativi
Knowledge and understanding: The student is expected, in this course, to reach an adequate level of knowledge of the fundamental elements of the discipline of hygiene and its applications in public health and food production.
The main objective is to achieve a comprehensive knowledge and understanding of: epidemiological method and different study models (and risk measurement); methods of proven effectiveness in the prevention and control of risks to the health of humans and populations (biological, chemical and physical risk), with particular attention to the prophylaxis of infectious diseases, those transmitted by food (infections, poisoning and food poisoning) and multi-factorial diseases (methods and models of secondary prevention); food safety and quality management methods and risk prevention, with particular reference to techniques for the conservation and prevention of food contamination (microbiological, chemical and physical); regulatory sources on food safety and quality, together with the ability to understand the most relevant indications deriving from them, for the training and correct management of personnel, as well as the different types of official control (and methods applied).

Prerequisiti
There are no prerequisite for this course

Contenuti del corso
The program will be divided into lectures
Didactic modules:
- Hygiene:
• Epidemiological methodology in public health
• Causation relationship: public health use of frequency / association and risk measures
• Epidemiological studies
• Epidemiological transition; application of standardized rates
• Sources and types of data; quantitative analysis. Practical applications of statistical methods in epidemiology for public health. Critical reading of data (and evaluation of scientific evidence)
• Prevention: times and methods. Evidence-based prevention
• Screening
• Epidemiology and prevention of infectious diseases: the host-agent-environment model; complex space-time-person interaction. Routes of exposure / mode of transmission (direct and indirect) of infections. Prevention aimed at the agent, host and environment; cleaning, disinfection, sterilization. Disinfestation and fight against vectors
• Active and passive immuno-prophylaxis
• Investigation of an epidemic
• Care-related infections. Methods of proven effectiveness in their prevention and management. Epidemiological surveillance and techniques for the assessment and control of infectious risk during care. Methods for promoting the quality of care among operators and various health professionals
• Epidemiology and prevention of multi-factorial diseases: risk factors and causal relationship networks
• Environment and health: physical, biological and social environment and their interactions; host-agent-environment models. Different forms of environmental pollution. Know the possible sources of interaction with the environment for human health.
• Nutrition and health. Fundamental concepts on human nutrition, food-related biological risks and other types of risk. Food infections and toxic infections. Assess the nutritional status of a population
• Water and health: quality and microbiological, chemical and physical characteristics. Qualitative and quantitative requirements of water intended for human consumption
• Disposal of solid and liquid waste. Epidemiological, health and economic impact.

Health and business economics:
• Health and business economics:
• National Health System (SSN).
• Methods of financing the health system.
• Financing of hospitalization activities (DRGs).
• Financing of outpatient activities: the tariff nomenclator

• Financing of the territorial social and health activities
• Health planning and management.
• Evaluate the effectiveness and efficiency of health systems.
• Principles of planning and allocation of resources.
• Economic analysis: cost-effectiveness, cost-benefit, cost-utility, etc.
• Health technology
• Quality in health care.
• Management of clinical risk
• Institutional accreditation.

Preventive medicine for workers:
• Occupational medicine: historical notes and past and present normative references
• Organization of workers' health protection services in Italy today (with reference to the Inail role)
• Prevention in the workplace in the light of the regulatory framework in force (also with reference to accidents at work and occupational diseases - outline of the meaning of a mixed system - tabbed and non-tabular diseases/ diseases requiring reporting (work related diseases/ cumulative trauma disorders)
• The main professional figures in prevention: role and obligations pursuant to currents laws
• Risk assessment and management today
• to the ergonomic/multidimensional/multidisciplinary approach)
• The main risks protected by currents laws
o Risks and pathologies from biomechanical overload of the spine and AASS (MMC, pulling and pushing actions, handling low loads at high frequency - technical standards ISO 11228 part I, II and III-)
o Risks and pathologies deriving from the use of VDT
o Risks and pathologies from mechanical vibrations of the whole body (T-B) and of the hand-arm system (H-A)
o Risks and pathologies from noise (hearing and extra-hearing damage)
o Risks and pathologies from NI and hints at NI
o Microclimate risks and pathologies
o Risks and pathologies from chemical agents
o Risks and pathologies from carcinogens and mutagens
o Risks and pathologies from dust with reference to asbestos and silica
o Risks and pathologies from biological agents including stab wounds
o Notes on diseases with emerging risks (e.g. disorders deriving from work-related stress and psychosocial discomfort in the workplace, pathologies deriving from nanotechnologies/nanomaterials/nano-objects)

General medicine:
• Implement practical information relating to a series of aspects / situations that can / will commonly be faced in professional life. Aspects related to prescription, certification, forms are discussed, always trying to maintain an interactive mode and a correspondence with what is the real clinical practice of the doctor.
• Present and discuss together different governance situations, in the setting of general medicine, as regards the management scenarios of a patient suffering from chronic diseases.
• Present and discuss together using a clinical diary as a trace, as a tool, the history of a real patient, his governance, as it occurs in the setting of general medicine.

Metodi didattici
The course is structured in didactic modules, based on lectures.
In particular, for the module of Health and Business Economics and Hygiene (in the second semester), the additional method of presentation of case studies, with the logic of Problem Based Learning, articulated by objectives, specifically related to the structure of the Educational program.

Modalità di verifica dell'apprendimento
TThe exam consists of a written assignment of 50 multiple choice questions, to be carried out online on the eLearning platform. The objective of the questionnaire is to assess whether the student has acquired complete knowledge of the foundations of Hygiene, Public Health and Health Management, Preventive Medicine for Workers; ensure that the student has acquired the theoretical foundations of the disciplines covered by the integrated course and that he has developed the ability to apply the acquired knowledge in daily practice. For this reason, in the questionnaire there are questions aimed at exploring the more formal and theoretical aspects and questions aimed at exploring the ability to apply knowledge in practice.
The distribution of the topics of the questions will reflect the teaching load of the course.
The evaluation of the assignment will be carried out according to an evaluation grid which will report the correct answers to an evaluation out of thirty. Sufficiency (18) will be assigned with 23 correct answers. The detailed assessment grid is presented at the beginning of the course and made available on the eLearning platform. There is the possibility for students to take an eligibility test at the end of the first semester (during the winter exam session) on the topics covered in the first semester, through a written assignment. The assessment of this test will be done jointly with the final test with the previously indicated criteria. If a student, who has taken an eligible test, does not pass the final exam, she will have to repeat the entire exam.

Testi di riferimento
• Ricciardi G. et al., Igiene - Medicina Preventiva - Sanità Pubblica. (Trattato di Igiene), Idelson-Gnocchi Ed., Napoli, III Ed. 2021
• Zanetti M. et al., Il medico e il Management, Ed. Accademia Nazionale di Medicina, Roma, II Ed. 2007
• Jekel J., Katz D.L., Elmore J.G., Wild D.M.G., Epidemiologia, Biostatistica e Medicina Preventiva. Ed. Elsevier-Masson, Milano 2009.
• Norman e Streiner, Biostatistica. Tutto quello che avreste voluto sapere, Casa Editrice Ambrosiana, II Ed., 2015
• Ricciardi, Kawachi, Lang, Oxford Handbook of Public Health Practice, Oxford University Press, III Ed. 2013
• Bertazzi P.A, Medicina del lavoro - lavoro ambiente salute, Raffaello Cortina Ed. 2013

Altre informazioni
In general, it is evaluated with regard to learning ability: development of the ability to learn the working method of epidemiology and hygiene, applied to public health, in the analysis of health-disease phenomena and risk prevention, together with the methods for the safety management of food preparation, storage, handling and administration
Specifically the ability to apply acquired knowledge and understanding, the Student is expected to apply theoretical and practical knowledge to the main types of health risks.
In acquiring the tools of descriptive, analytical and evaluative epidemiology and measures of disease frequency and risk, as well as protective factors and positive determinants of health - in order to provide practical application - it will be possible to prepare, with a guided method, simple schemes of epidemiological investigations relating to some of the most relevant risk and risk factors for foods and proceed with the analysis of scientific reports (and articles) on the topic.
The knowledge inherent to proven effective methods will be applied through the guided analysis of real or simulated risk situations. The knowledge acquired on food safety management methods and on the principles of hygiene and safety in the workplace and the training of personnel (food preparation workers) will be applied through the guided drafting and reading of risk analysis and point classification schemes. critical controls (flow diagrams) and the analysis of self-control plans.

The following results regarding judgment ability are evaluated: acquisition of a progressive ability to judge in terms of assessing risks to the health of populations, evidence of effectiveness in public health, prevention of risks in food production.
Finally, it is planned to evaluate the achievement of some main communication skills objectives:
- for epidemiological data and study results
- due to the risk of food-borne diseases
- for the management of food production safety.

L'attività didattica è offerta in:

Facoltà Dipartimentale di Medicina e Chirurgia

Tipo corso	Corso di studio (Ordinamento)	Percorso	Crediti	S.S.D.
Laurea Magistrale Ciclo Unico 6 anni	Corso di Laurea Magistrale in Medicina e Chirurgia (2019)	comune	11	MED/44, SECS-P/07, MED/42, MED/42, MED/42, MED/42

Stampa del 06/05/2025

Immunologia Clinica, Allergologia e Malattie Infettive [1201311]

Offerta didattica a.a. 2024/2025

Docenti: ROBERTO GIACOMELLI, ROBERTO CAUDA

Periodo: Secondo Ciclo Semestrale

Syllabus non pubblicato dal Docente.

L'attività didattica è offerta in:

Facoltà Dipartimentale di Medicina e Chirurgia

Tipo corso	Corso di studio (Ordinamento)	Percorso	Crediti	S.S.D.
Laurea Magistrale Ciclo Unico 6 anni	Corso di Laurea Magistrale in Medicina e Chirurgia (2019)	comune	6	MED/09, MED/17, MED/09, MED/17

Stampa del 06/05/2025

Inglese Generale [12011C5]

Offerta didattica a.a. 2024/2025

Docenti:

Periodo: Ciclo Annuale Unico

Syllabus non pubblicato dal Docente.

L'attività didattica è offerta in:

Facoltà Dipartimentale di Medicina e Chirurgia

Tipo corso	Corso di studio (Ordinamento)	Percorso	Crediti	S.S.D.
Laurea Magistrale Ciclo Unico 6 anni	Corso di Laurea Magistrale in Medicina e Chirurgia (2024)	comune	4	L-LIN/12

Stampa del 06/05/2025

Inglese Generale [12012C2]

Offerta didattica a.a. 2024/2025

Docenti: ROBERTA ARONICA

Periodo: Ciclo Annuale Unico

Obiettivi formativi
The course focuses on medical terminology and in particular on the listening comprehension of healthcare setting dialogues

Prerequisiti
Each student has to pass the first year test before they can take the final pass/fail exam.

Contenuti del corso
The course focuses on medical terminology and in particular on the ability to understand dialogues in the healthcare setting.

Metodi didattici
The whole course is taught through frontal lessons.

Modalità di verifica dell'apprendimento
The final exam is a written test with open questions on a healthcare setting dialogue

Testi di riferimento
The material will be provided by teachers.

Altre informazioni
By the end of the course, students will be able to understand a conversation between doctor and patient and/or doctor and healthcare professionals and write a full report

L'attività didattica è offerta in:

Facoltà Dipartimentale di Medicina e Chirurgia

Tipo corso	Corso di studio (Ordinamento)	Percorso	Crediti	S.S.D.
Laurea Magistrale Ciclo Unico 6 anni	Corso di Laurea Magistrale in Medicina e Chirurgia (2019)	comune	4	L-LIN/12

Stampa del 06/05/2025

Inglese Tecnico Scientifico [1201312]

Offerta didattica a.a. 2024/2025

Docenti: ROBERTA ARONICA

Periodo: Ciclo Annuale Unico

Obiettivi formativi
The first year of the course is aimed at enhancing language skills, covering all skills: reading, writing, listening and speaking, preparatory to the teaching of medical-scientific English envisaged in the second and third years. The object of the first year of the course is to go in depth in grammatical and syntactic structures associated with a minimum level B2 CEFR. The teaching activities are taught by native speakers who collaborate with the University Language Centre. The object of the second year of the course is the acquisition of medical-health vocabulary by listening to conversations between patients and health personnel. The object of the third year is the analysis of scientific articles and the acquisition of the technique of drafting an abstract, as well as the preparation to make presentations of a medical nature.

Prerequisiti
Each student is required to take a placement test at the start of the first year to identify their initial level of English. Students with an initial level equal to or higher than the B2 CEFR level are exempt from the first year of the course. Students with language certifications of level B2 or higher can obtain exemption from the first year by submitting an application to the attention of the University Language Center (cla@unicampus.it).

Contenuti del corso
The 12 CFU curricular course is divided into three parts, each lasting one academic year.

The program of the first year of the course, to acquire B2 level is:
Grammar: Review of regular and irregular verbs, The Present Simple and Continuous, Past Simple, Past Progressive, Past Perfect Simple, Present Perfect simple, 1,2,3 conditionals, modal verbs to express skills, obligations, advice, Passive form, comparatives and superlatives, Past Conditionals, forms to express the future, modal auxiliaries in the past to express probability, The passive form, direct/indirect speech, forms with I wish, If only
Vocabulary : Daily life, education, media and entertainment, environment health, medicine and physical exercise, hobbies and leisure, feelings, likes and dislikes, places and buildings, interpersonal relationships, transport services, social interaction, the world of nature, travel and holidays, expression of hypotheses, ways of expressing the future from the past.
The object of the second year of the course is the acquisition of medical vocabulary by listening to conversations between patients and healthcare professionals.
In the third year, the course reinforces the medical-scientific terminology and focuses on the reading comprehension of scientific articles and on abstract writing, as well as on the ability to present medical topics.

Metodi didattici
The course is delivered in the classroom through lectures and exercises organized in groups. During the third year, there are also hours of individual and group work for the preparation of scientific abstracts and medical presentations to be presented to the class in small groups.

Modalità di verifica dell'apprendimento
At the end of each of the first two years, learning assessment is carried out through a partial test.
The partial test at the end of the first year is written and consists of grammar, reading comprehension, writing and listening exercises.
The partial test at the end of the second year is a written test composed of open questions based on listening to a dialogue in the healthcare setting.
At the end of the third year, the final exam consists of a written test and an oral interview. In the written exam students are required to write the abstract of a scientific article, while the oral interview consists of two to four questions on the medical topics addressed during the course.
Grammar, vocabulary, reading, writing, and listening skills are assessed at the end of the first year by means of a written test and a listening test with a respective B2 level open-ended comprehension test. Communication skills (speaking) are assessed by the teacher during the first year through interactive activities. The result of the partial test of the first year is on a pass or fail basis. To achieve a pass grade, the student must obtain a total score equal

to or greater than 60%.
The oral comprehension and written production skills of medical-healthcare language are assessed at the end of the second year through a partial written test consisting of open questions by listening to a dialogue between patient and healthcare staff. To achieve a pass grade, the student must obtain a total score equal to or greater than 60%.
The final exam in the third year is composed of writing the abstract of a scientific article and of an oral interview with questions on the medical topics addressed during the course of the third year. The final evaluation is awarded out of thirty and takes into consideration structure, linguistic-grammatical correctness, appropriateness of technical-scientific language, pronunciation and preparation of contents.

Testi di riferimento
The teaching material will be provided by the teachers during the courses.

Altre informazioni
At the end of the first year, the student must have acquired a minimum level of English B2 CEFR.
In particular, with the achievement of level B2 the student is able to:
- Understand the main ideas of complex texts on both concrete and abstract topics, as well as technical discussions in their field of specialization.
- Interact with a certain fluency and spontaneity that make natural interaction possible with native speakers without straining the interlocutor.
- Produce clear, detailed text on a wide range of subjects and be able to explain a point of view on a topic giving the advantages and disadvantages of various options.

At the end of the second year, the student must have acquired a good command of medical language and the ability to answer open-ended questions on a healthcare, field dialogue.
At the end of the third year, the student will have to demonstrate that they have learned an adequate language for carrying out the profession to allow them to construct abstracts from medical-scientific articles as well as to execute presentations in English.

L'attività didattica è offerta in:

Facoltà Dipartimentale di Medicina e Chirurgia

Tipo corso	Corso di studio (Ordinamento)	Percorso	Crediti	S.S.D.
Laurea Magistrale Ciclo Unico 6 anni	Corso di Laurea Magistrale in Medicina e Chirurgia (2019)	comune	4	L-LIN/12

Stampa del 06/05/2025

Introduction to medicine [12011C1]

Offerta didattica a.a. 2024/2025

Docenti: VITTORADOLFO TAMBONE

Periodo: Ciclo Annuale Unico

Syllabus non pubblicato dal Docente.

L'attività didattica è offerta in:

Facoltà Dipartimentale di Medicina e Chirurgia

Tipo corso	Corso di studio (Ordinamento)	Percorso	Crediti	S.S.D.
Laurea Magistrale Ciclo Unico 6 anni	Corso di Laurea Magistrale in Medicina e Chirurgia (2024)	comune	5	MED/02, MED/43

Stampa del 06/05/2025

Introduction to medicine [1201204]

Offerta didattica a.a. 2024/2025

Docenti: FRANCESCO DE MICCO

Periodo: Primo Ciclo Semestrale

Obiettivi formativi
The course aims to provide students with the knowledge and skills to: (a) understand the methodological and humanistic bases of the historical development of medicine and surgery; (a) understand the methodological bases of the development of medicine and its historical study; (b) frame professional activity in its inescapable relations with the broader context of society, recognising the need to adequately take into account, address and prevent critical factors of a social, economic and political nature linked to illness and health; (c) understand the main deontological issues of the medical profession (general duties of the medical doctor, relations with the citizen, relations between patient and physician, relations with other health care workers)

Prerequisiti
The examination of the Introduction to Legal Medicine module can only be taken after taking the History of Medicine and Social Medicine modules

Contenuti del corso
History of Medicine (1st year, 1st semester)
- Introduction: learning objectives, study method, exam.
- Ancient medicine. Hippocrates and Galen
- Medieval medicine: the Arabs and the School of Salerno
- Medieval medicine: the Black Plague and the origins of public health
- The Galilean revolution and Medicine: Vesalius, Harvey and Morgagni
- Iatrochemistry and Iatromechanics.
- Edward Jenner
- René Laennec, tuberculosis and the diagnostic revolution.
- The role of the “visionaries”: Florence Nightingale and Jean Henri Dunant.
- The birth of experimental medicine: Claude Bernard.
- Medicine in the time of cholera: John Snow and the Broad Street Pump; Epidemiology and health reforms.
- Louis Pasteur and Robert Koch: microbes and nationalism.
- The century of surgery: anesthesia and antisepsis.
- The new paradigm: Charles Darwin and the theory of evolution; Gregor Mendel and the birth of genetics.
- Mind and Brain: a short history of their healthcare
- The Rise of American Medicine: William Osler and the Johns Hopkins Medical School.
- The long battle of women for access to the medical profession.
- Charles West and the invention of pediatrics
- Guido Baccelli, Rome’s physician
- The radiological revolution.
- The human factor in medicine: Paul Ehrlich and Alexander Fleming.
- The fight against malaria: a case of Italian excellence.
- Collaboration between doctors and engineers in the twentieth century.
- Deeds and misdeeds in the history of biomedical experimentation.

Social Medicine(1st year, 1st semester)
- Definition of social medicine and social disease
- Curative medicine – community medicine
- The age pyramid chart
- Definition of health
- One health, determinants of health, care models and welfare state
- Precautionary principle
- Principle of solidarity
- Determinants of health in infectious disease
- Hippocrates – Osler – J. Mann
- Equality and equity
- The transition of the medical paradigm and the disease model: the Health Field
- Prevention: primary – secondary – tertiary

- The theory of needs
- Doctor-patient relationship: the hermeneutic triangle
- The hospital as a system of relationships
- The method in social medicine
- Global health. Health and social equity. Global health strategies.
- Addictions as a social-health phenomenon.
- AIDS as a social disease

Introduction to Legal Medicine (2nd year, 1st semester)
- Deontology and Code of Ethics
- The medical profession
- The Professional Order
- Freedom and independence of the profession
- Professional secrecy and the protection of confidentiality
- Emergency services
- Resource Utilization
- Patient safety and clinical risk management
- Relations with the citizen in specific care contexts
- Respect for the dignity of the patient in a relationship of trust
- Informing the patient and obtaining consent to the medical act
- Issues at the beginning of human life
- Issues at the end of human life
- Experimentation
- Intra- and inter-professional relations
- Relations with public and private healthcare facilities
- Empowering and aesthetic medicine
- Informatisation and healthcare innovation

Metodi didattici
History of Medicine
- Lectures and visits to the museum of History of Medicine at La Sapienza University

Social Medicine
- Lectures and work-group with supervision

Introduction to Legal Medicine

Modalità di verifica dell'apprendimento
An oral examination is scheduled for each module (History of Medicine, Social Medicine and Introduction to Legal Medicine). The examination will be designed to ascertain the student's actual degree of learning of the content. Consideration will be given to the student's ability to process knowledge independently, the level of detail and the use of clear and appropriate language.

Testi di riferimento
History of Medicine
- Borghi L. Umori. Il fattore umano nella storia delle discipline biomediche. Amazon KDP. 2023.
- A biography or an essay on a historical/medical topic chosen by the student, to be agreed with the teacher.
- The slides shown during the lessons will be made available to students on the UCBM e-learning platform.

Social medicine
- Carta delle finalità del Campus Bio Medico
- Dichiarazione di Alma Ata
- Dichiarazione di Ottawa
- Herranz G. L'ospedale come organismo etico
- Mottini G. Cooperazione e sapere biomedico
- Mottini G. Povertà, alimentazione e sviluppo umano
- Pelaez M., Mottini G. AIDS e bioetica: la tutela dei diritti umani
- ASL di Vicenza, Manuale di cura dell'Alzhaimer

Introduction to Legal Medicine
- Federazione Nazionale degli Ordini dei Medici Chirurghi e degli Odontoiatri. Codice di Deontologia Medica.
Available at:
https://portale.fnomceo.it/wp-content/uploads/2020/04/CODICE-DEONTOLOGIA-MEDICA-2014-e-aggiornamenti.pdf
- - Slides and material produced by the lecturer will be uploaded to the e-learning platform

Altre informazioni
History of Medicine

- Knowledge and understanding
Knowledge and understanding of the main stages and dynamics that accompanied, favoured or hindered the development of medicine and surgery, with particular attention to the methodological turning point of the nineteenth century.
- Applied knowledge and understanding
Application of the above to the analysis of events and protagonists according to the interpretative key of the 'human factor' and with particular attention to the places and material memories left by the medical history.
- Autonomy of judgment
Autonomous discovery and appreciation of the existential and psychological characteristics typical of the great innovators and revolutionaries of medical history.
- Communication skills
Analysis and effective presentation of a book (biography, historical essay…) relevant to the subject of the course freely chosen by the student.
- Ability to learn
The course offers the cultural and methodological tools to continue to enrich one's professional training thanks to the historical and geographical framework of themes and problems with which one will come into contact over time.

Social Medicine
- Knowledge and Understanding
Knowledge of the main social and relational dynamics of the health phenomenon at a collective and global level
- Applied Knowledge and Understanding
Be able to identify methods and operational practices of medical-social research. Knowing how to define the correlations between collective health needs and the offerings of the healthcare system (needs theory)
- Autonomy of Judgment
Ability to identify situations of inequality in access to health and define the corrective measures necessary to guarantee a health welfare system
- Communication Skills
The student must be able to establish an effective and positive relationship both with the patient and with the other actors in the healthcare phenomenon.
- Learning Ability
The student is encouraged to develop a social awareness of being a doctor, which goes beyond the acquisition of technical-scientific skills, and which allows him to acquire a multidimensional reading of the combination of health and disease.

Introduction to Legal Medicine
- Knowledge and Understanding
To know and understand the deontological principles that characterise the professional autonomy and responsibility of the physician.
- Applied Knowledge and Understanding
Deciding, planning and implementing effective and safe care interventions that comply with quality standards and are based on scientific evidence, respecting legal and ethical responsibilities, with a personalised and integrated approach that considers individual and community needs, thus improving the health status and general well-being of the people involved.
- Autonomy of Judgment
Use critical thinking to understand the phenomena that characterise the reality of care and deontological reflection.
- Communication Skills
Presenting and discussing one's decisions with colleagues and other professionals, even in situations of moral distress, in order to ensure transparency, accountability and enrich one's point of view, contributing to a collaborative and understanding working environment.
- Learning Ability
Deal autonomously and critically with the study of deontology for the acquisition of new knowledge and understanding of new phenomena.

L'attività didattica è offerta in:

Facoltà Dipartimentale di Medicina e Chirurgia

Tipo corso	Corso di studio (Ordinamento)	Percorso	Crediti	S.S.D.
Laurea Magistrale Ciclo Unico 6 anni	Corso di Laurea Magistrale in Medicina e Chirurgia (2019)	comune	3	MED/43

Stampa del 06/05/2025

Istologia ed embriologia [1201109]

Offerta didattica a.a. 2024/2025

Docenti: MARIA ZINGARIELLO

Periodo: Secondo Ciclo Semestrale

Obiettivi formativi

The course aims to make the student acquire the knowledge of the general organization under the morphological profile of the human body, and the close correlation between structure and function, integrating the microscopic knowledge of cells and tissues with the macroscopic knowledge of organs and apparatuses with their functions.
To be able to describe tissues, organs, apparatuses with scientific language, according to the level of depth established during the lessons.
The student must acquire

Prerequisiti

Basic knowledge of chemistry and mechanisms of cell biology, basic mechanisms involved in cellular processes, are required as prerequisites.

Contenuti del corso

Cytology. Cell shapes and sizes, general cell organization, biological membranes, membrane specializations, membrane transport, cytoplasmic matrix, membranous cytoplasmic system, Golgi complex, ribosomes, lysosomes, centrioles, mitochondria, cytoskeleton, cell movement, nucleus, nucleolus , cell junctions.
Histology. Origin of tissue. Epithelial tissue: classification of epithelia, lining epithelia, exocrine glands, endocrine glands, secretion mode, neuro-endocrine correlations. Connective tissues: classification and structural components, cartilage tissue, bone tissue, blood, immune system and hematopoiesis. Muscle tissue: classification. Nervous tissue and neurlia
Embryology. Principles of general embryology: stages of the life cycle, gonadal development, gametogenesis (spermatogenesis and ovogenesis), fertilization, segmentation, gastrulation, embryonic sheets and derivatives. Development of the fetus and embryonic adnexa.

Metodi didattici

The course is delivered through lectures (80%) and exercises (20%) with laboratory activities at light microscope, using preparations of cell and tissue types, aimed to provide skills in the interpretation of the histological specimens with the supervision of tutor.
On request, there are also hours of tutoring and study with the teachers or with tutor discipline.

Modalità di verifica dell'apprendimento

Learning evaluation methods and criteria:
• At the end of the course the student will take:
an oral interview in the appeals provided by the academic calendar, on the topics of cytology, histology and embryology treated during the course.
The student, during this test will have to demonstrate that he has reached the acquisition of knowledge and an adequate level of depth of the subject that allow him to make clinical correlations tending to highlight the cytological or histological bases of some of the major morbid phenomena. Such correlations may involve cellular organelles, embryonic development mechanisms or tissues studied.
• a practical microscope test during which the student will have to describe the morphological macroscopic and microscopic characteristics of the histological preparation, demonstrating to be able to apply the acquired knowledge, in order to:
- correctly recognise the histological preparation,
- diagnosis of the various tissues by appropriate language
- to be able to identify the cellular or tissue bases of the pathogenesis of the main genetic, malformative, teratogenic, infectious, metabolic, degenerative or neoplastic diseases.

Criteria for measuring learning and awarding the final grade:
The evaluation of learning involves the allocation of a final vote expressed in thirtieths. The exam takes place at the end of the course according to the academic calendar. For the verification of the contents through the oral interview, the evaluation criteria will be the correctness, completeness, clarity of the exposure; the ability to make clinical correlations tending to highlight the cytological or histological bases of some of the main disease phenomena.

Testi di riferimento
• Rosati: “ Istologia” Edi Ermes.
• Monesi: Istologia “ Piccin.
• Don W. Fawcett – Bloom e Fawcett “ Trattato di Istologia “ McGraw-Hill.
• Rizzoli et al.: “ Guida illustrata all’Istologia” Piccin.
• Gartner et al: “Istologia” atlante Piccin
• Antonucci: “ Guida all’interpretazione di un preparato istologico “ Libr.Un. Edit.
• Rosati et al.: “ Embriologia Generale “ Edi Ermes.
• Moore , Persaud: “ Lo sviluppo prenatale dell’uomo EdiSES
• Langman “ Embriologia medica “ Piccin.
• De Felice et al: “Embriologia Umana” Piccin
• Larsen: “ Embriologia Umana “ Gnocchi.

Altre informazioni
Specific learning outcomes:
Knowledge and understanding
The student must acquire knowledge concerning:
• The processes of tissue organization starting from the elementary mechanisms of embryonic development and cell differentiation, not neglecting the necessary correlations with microscopic anatomy and physiology of organs and apparatuses.
• The morpho-functional framework useful for interpreting the metabolic processes taking place at the cellular and organual levels; • Recognition by optical microscope:
a) of the cellular structure
b) of man’s supra-cellular units, represented by tissues, pluri-tissue units
c) biological aspects of human development
This knowledge is an important prerequisite for integration with other disciplines such as Anatomy

Ability to apply knowledge and understanding

• The student should acquire the ability to observe and then describe with appropriate language what the observation revealed; in the specific case, what was found by microscopic observation.
• Finally, to consider some clinical correlations tending to highlight the cytological or histological bases of some of the main disease phenomena and to clarify the cellular or tissue bases of the pathogenesis of the main genetic etiogenesis diseases, malformative, teratogenic, infectious, metabolic, degenerative or neoplastic. Such correlations involve cellular organelles, embryonic development mechanisms or tissues studied.

L'attività didattica è offerta in:

Facoltà Dipartimentale di Medicina e Chirurgia

Tipo corso	Corso di studio (Ordinamento)	Percorso	Crediti	S.S.D.
Laurea Magistrale Ciclo Unico 6 anni	Corso di Laurea Magistrale in Medicina e Chirurgia (2024)	comune	7	BIO/17, BIO/17, BIO/17

Stampa del 06/05/2025

Blood disorders and oncology with integrated treatments [1201510]

Offerta didattica a.a. 2024/2025

Docenti: GIUSEPPE TONINI, OMBRETTA ANNIBALI, SARA RAMELLA

Periodo: Primo Ciclo Semestrale

Syllabus non pubblicato dal Docente.

L'attività didattica è offerta in:

Facoltà Dipartimentale di Medicina e Chirurgia

Tipo corso	**Corso di studio (Ordinamento)**	**Percorso**	**Crediti**	**S.S.D.**
Laurea Magistrale Ciclo Unico 6 anni	Corso di Laurea Magistrale in Medicina e Chirurgia (2019)	comune	14	MED/36, MED/36, MED/18, MED/06, MED/06, MED/06, MED/15, MED/15, MED/15

Stampa del 06/05/2025

Diseases of the musculoskeletal system [1201514]

Offerta didattica a.a. 2024/2025

Docenti: ROCCO PAPALIA, VINCENZO DENARO

Periodo: Secondo Ciclo Semestrale

Syllabus non pubblicato dal Docente.

L'attività didattica è offerta in:

Facoltà Dipartimentale di Medicina e Chirurgia

Tipo corso	Corso di studio (Ordinamento)	Percorso	Crediti	S.S.D.
Laurea Magistrale Ciclo Unico 6 anni	Corso di Laurea Magistrale in Medicina e Chirurgia (2019)	comune	6	MED/33, MED/34, MED/33, MED/33

Stampa del 06/05/2025

Legal medicine [1201604]

Offerta didattica a.a. 2024/2025

Docenti: GIUSEPPE LA MONACA

Periodo: Primo Ciclo Semestrale

Obiettivi formativi
The course aims to illustrate legal, ethical and deontological rules that underlie the practice of medical profession and represent its limits and prerogatives; to provide elements for discussion about the rights and duties of the doctor, with particular reference to the relationship with the patient and the guarantee role in the field of medical professional liability; to provide an integrated view of medico-legal and ethical approach to the medical profession in the various and most common problems that may come to the attention of healthcare professionals.

Prerequisiti
none

Contenuti del corso
The program will be carried out through frontal lectures (on specific topics of criminal and civil law, thanatology and forensic pathology, insurance medicine, deontology and bioethics), accompanied by illustrative practical cases.

Legal Medicine
Rudiments of law. Legal medicine in Criminal Law: definitions of crime and criminal liability, causation in Italian law, crimes against life, crimes against individual safety, abortion, sexual violence, competency and chargeability in criminal law. Legal medicine in Civil Law: competency in civil law, capacity to contract, wills and testamentary capacity, guardianship, wedding according to civil law, filiation, civil liability and compensation for damage. Wedding according to canon law. Forensic pathology. Thanatology. Determination of death according to Italian law. The role of physician in the Social Insurances and Occupational Health Law. Insurance against accidents at work and professional diseases. The National Institute of Social Security. Civil invalidity. The role of physician in common private insurance policies. The legal and deontological duties of physician with particular regard to: the rules of Codex of Medical Deontology, the informed consent, the professional secret, the medical report and the denunciations to the judicial authority, the clinical folder. Rudiments in matter of medical malpractice and physician liability.

Issues of clinical bioethics
Therapeutic persistence and patient abandonment. Extrauterine pregnancy. Prevention of patient suicide and assisted suicide.

Metodi didattici
Frontal lectures accompanied by illustrative practical cases.

Modalità di verifica dell'apprendimento
The assessment of learning will take place by an oral examination in which the knowledge acquired by the student regarding the legal, ethical and deontological rules to be followed in the medical profession, the forms of welfare, social security and legal protection provided for by our system, as well as in the field of thanatology and forensic pathology are evaluated.

The final evaluation is expressed in thirtieths and possible praise and takes into account the degree of overall competence achieved by the student in all the aforementioned areas.

Testi di riferimento
Legal Medicine:
Handouts prepared for students to facilitate the study.
Reference texts:
Puccini C., Istituzioni di Medicina Legale, CEA, Casa Editrice Ambrosiana, Milano, 2003.
Norelli G.A., Buccelli C., Fineschi V., Medicina Legale e delle Assicurazioni, Piccin, Padova, 2013.
Anzilotti S., La posizione di garanzia del medico. Uno studio giuridico, bioetico e deontologico, Giuffrè, Milano, 2013.

Issues of clinical bioethics:

Scientific papers distributed during the lessons.
Reference texts:
Tambone V., Sacchini D., Cavoni C.D., Eutanasia e Medicina, UTET, 2008.

Altre informazioni

Knowledge and understanding.
Understanding physician’s legal, deontological and ethical duties in medical practice. Knowledge of the legal prerequisites of criminal and civil liability and the main crimes of interest for health care professions. Knowledge of the main forms of welfare, social security and legal protection provided by the state to protect the most vulnerable subjects (minors, elderly and disabled persons, mentally ill). Knowledge of the main pathologies of forensic interest and thanatological semeiotics.

Applying knowledge and understanding
To apply the knowledge acquired in the choice of the most correct behaviors to adopt in the various professional situations that involve legal, insurance, deontological and ethical problems and to perform activities required by the judicial authority and resolve issues regarding the time and cause of death, the interpretation of injuries both on the corpse and on the living person, personal identification, as well as the assessment of personal damage.

L'attività didattica è offerta in:

Facoltà Dipartimentale di Medicina e Chirurgia

Tipo corso	Corso di studio (Ordinamento)	Percorso	Crediti	S.S.D.
Laurea Magistrale Ciclo Unico 6 anni	Corso di Laurea Magistrale in Medicina e Chirurgia (2019)	comune	4	MED/43, MED/43

Stampa del 06/05/2025

Metodologia Clinica [1201419]

Offerta didattica a.a. 2024/2025

Docenti: MICHELE PIER LUCA GUARINO

Periodo: Ciclo Annuale Unico

Obiettivi formativi

To apply the method of clinical reasoning correctly, which means alternating the abductive or inductive processes with hypothetic-deductive processes in the use of clinical information gradually studied and available.
To be aware of and know how to use some of the principal communication models with the patients and with the other members of the health équipe.
Learn to evaluate the approach of the patient to his/her disease.
Understand the diagnostic value of the signs and symptoms that the patient presents also as far as concerns sensitivity, specificity, predictive value and of other methods which are related to the probablistic approach to the diagnosis.
Know how to apply Evidence Based Medicine (EBM) by means of critical reading of the results of scientific research.
Interprete, from a pathophysiological viewpoint, the semeiological findings in syndromes, thus triggering the initial hypotheses in the differential diagnosis process.
Learn to evaluate the patient’s approach as far as concerns his/her pathological condition.

Prerequisiti

To take the Clinical Methodology exam you must have passed the Introduction to Medicine exam.

Contenuti del corso

What is Psychology: The different branches (general, social, clinical) and the main Schools. Needs and Motivations: fundamental elements of each activity, in particular that of health. Cognitive processes and conscience states. Functioning of the mind when awake and when asleep. Modern psychophysiology when awake, when asleep, when dreaming. Changes in hemispherical assimetry in the sleep-awake cycle. Organization of the mind according to the processes of development, changes in behavioural state and in keeping with the needs of the task: towards a bidimensional concept of the thought. Medicine related to the awake status and medicine related to sleep. Communication as a constitutive element of interpersonal relationships – The relationship with others: the wounded healer. Meet the other one: the true invalid. Listening and resonance. Emotional resonance and re-elaboration. Languages and lexicon, scientific lexicon. Familiar lexicon. Virtual lexicon. Lexicon in the relationship with the patient Empathy- its importance in communication between doctor and patient (situations of difficult communication and overcoming this). Phenomenology of Emotions – their implications in the dynamics of physician-patient relationships. Defense Mechanisms and coping with oneself and the other person in the self-management and of the other person in clinical activities. Characteristics and psychological evaluation scale (theory and technique of tests). Types of personality and their influence on physician-patient relationship. The processes of Decision making. Psychology of health. Concepts of health and disease – From the traditional biomedical model to the biopsychosocial model. From the prevention of the disease to the promotion of well-being: pathogenesis and healthgenesis. From “cure” a patient to “take care of a person who is suffering”.

Definition and Evolution of Nursing. Skills and Responsibilities. Future perspectives. Interdisciplinary Collaboration in the Healthcare Field. Definition and fundamental principles of Palliative Care. Life quality. Ethical and Legal Aspects. The local and regional Palliative Care Network: Organization, Coordination, Role of the Network's Health Facilities. Basic and specialist assistance in Palliative Care. Hospice, home and hospital care: organization and functioning; the holistic approach to pain and symptom management. The interdisciplinary team: composition, roles and responsibilities. Collaboration and communication. Psychosocial and spiritual support.

Methods and instruments used to acquire data related to clinical practice and experimental research (clinical trials).
EBM and statistical methodology. The normality concept (health and disease, correct appraisal of clinical and instrumental data etc.).
Clinical Reasoning: first examination, observation processes, identification of current problems, anamnesis and objective examination.
EBM (use of informatics). How to find the best evidence. Systematic reviews and metanalysis.
Formulation of hypotheses (use of Intuition/Induction/ Deduction in clinical reasoning).
The principal methods used in the statistical analysis of clinical data: general concepts regarding the probability and their applications in clinical practice and in experimental research.

Collection of data for medical and nursing chart.
Control of the hypothesis: probabilistic methods for the formulation of hypotheses and control of the diagnostc hypotheses.
Processes in decision-making: Management: Consensus/refusal. Statistical Methods in the evaluation of the effectiveness of the treatment. Routine and emergency situations. Diagnostic choices and decisions: psychological aspects/ type of personality.
Diagnosis: transmission; communication of the diagnosis; letter of discharge from hospital.
Subsequent check-ups and follow-up. The second examination. Methods used in the appraisal of variations in the clinical conditions at later follow-up. Role of autopsy Error-mistake, malpractice and human limits. Reasons not related to the Medical profession. Diagnostic and
therapeutic errors: statistical data and procedures in order to avoid them.
Hierarchy, team-work-responsibility in the.decision-making processes.

Metodi didattici

Lectures, interdisciplinary seminars with clinical scenarios and classroom exercises

Module of Clinical Psychology, Social Psychology, Nursing and Clinical Bioethics (3rd YEAR)
Clinical Psychology topics will be illustrated in 6 2-hour lessons, with also examples of clinical practice. Social Psychology topics will be illustrated in 8 2-hour lessons, with simulations and examples of clinical practice. Nursing topics will be illustrated in 4 lessons of 2 hours each. Each lesson will include interactive seminars involving industry experts. During these seminars, there will be space for questions and answers, allowing students to delve deeper into the topics covered and clarify any doubts. Lessons will be designed to be dynamic and engaging, using a combination of presentations, group discussions and case studies to facilitate active learning.
The topics of Clinical Bioethics will be illustrated in 6 2-hour lessons organized in seminar activities. The series of seminars is divided into a series of meetings on highly topical issues, held with expert professionals in the sector.

General medicine module, medical statistics and epidemiology
In the second semester of the third year, 2 seminars are planned on the topic of the structure of the NHS, of local medicine and on the role, organization and method of general practitioners in the primary care system to enable the student to acquire knowledge on the particular setting of the doctor of General Medicine.
The theoretical activity will be accompanied by a practical internship, for all students, consisting of 2 visits to the practice of a GP.
The statistics and epidemiology course will be structured into theoretical methodological lessons and a practical part. Lessons will be held on topics of general statistics and epidemiology. The lessons are accompanied by examples of critical analysis of the literature and by the classroom presentation of some recently published clinical trials to be evaluated based on the clinical research methodology adopted by the authors and according to the principles of Evidence Based Medicine.

As part of the first semester of the fourth year, 3 2-hour seminars will be held on topics of specific interest in General Medicine. The principles of Health Economics will be illustrated in 4 2-hour lessons
Clinical methodology module: The lessons of the second semester are characterized by significant integration due to the presence of teachers from different fields. For this reason the topics implement the interdisciplinarity prepared in the third year. Each lesson will be introduced by a clinical scenario.

Modalità di verifica dell'apprendimento

A written assessment will be carried out at the end of the third year on the topics covered in applied bioethics, social psychology and clinical psychology to verify the ability to apply abductive or inductive logical processes and hypothetical-deductive processes in clinical reasoning as well as the ability to evaluate from the from an ethical point of view, concrete clinical cases, applying communication models and tools of interprofessional collaboration.
The final exam (at the end of the fourth year) is divided into an oral test aimed at verifying whether the student is able, through the discussion of clinical cases, to correctly apply the clinical reasoning method, to motivate the diagnostic choice based on to criteria of sensitivity, specificity, predictive value and cost/benefit. Furthermore, examples of scientific studies will be discussed to evaluate the ability to know how to apply Evidence Based Medicine.

The final evaluation is calculated on the basis of the individual evaluations (eligible and at the end of the fourth year) and involves the attribution of a final mark expressed out of thirty.
The effort of synthesis and personal re-elaboration made by the candidate on the contents of the course will be evaluated.

Testi di riferimento

REFERENCES
• Modulo di Psicologia Clinica, Psicologia Sociale, Infermieristica, Bioetica Clinica, Statistica Medica-Epidemiologia (3° ANNO)
Kring, Davison, Neale & Johnson – Psicologia Clinica – Zanichelli 2013
P. Pellegrino, M. Gilio – PRENDERSI CURA. Elementi di Psicologia per le professioni sanitarie, AMAZON KDP, 2024

D’Agostino F., Palazzani L. Bioetica. La Scuola, Brescia, 2021
Gordis Leon, “Epidemiology” Elsevier/Saunders, 2009
Douglas G. Altman” practical statistics for medical research” ed. Chapman and hall
Modulo di metodologia clinica (4° ANNO)
Torsoli A. Metodologia clinica, il Pensiero Scientifico Editore, 1997
Sanders L. Ogni paziente racconta la sua storia. L'arte della diagnosi. Einaudi 2009

Altre informazioni

Knowledge and understanding
The student will have to acquire skills and competences aimed at being able to apply the theoretical information and operational skills acquired in clinical practice. In particular, they will have to know how to deal with clinical cases in a reasoned manner and know how to correctly apply the clinical reasoning method in line with Evidence Based Medicine (EBM). Knowledge of the Italian healthcare organization will make interaction with local medicine possible. These training objectives will be pursued through the discussion of clinical cases, autonomy of judgment (making judgements)
Autonomy of judgment will have a theoretical foundation in Karl Popper's Critical Rationalism and will be stimulated through the interactive discussion of clinical cases with the coordination of a tutor teacher in the classroom. Autonomy of judgment will be stimulated both in the clinical setting through the interpretation, in a pathophysiological perspective, of semiological findings in syndromic complexes and decision trees (flow charts), and in the experimental setting through the discussion of the available Best Evidence.
Communication skills
The student will have to present group work on scientific research and epidemiology topics. The presentations will be carried out in the presence of all the course teachers with the use of IT media. This objective will also be pursued through the discussion of the main communication models with patients and other members of the healthcare team. These exercises will represent a practical example of interdisciplinarity.
Learning skills
The frontal lessons will always be characterized by interactive discussion between all teachers and students who will be left ample space for questions. Learning ability will also be stimulated by the presentation of group work and participation in seminars.

L'attività didattica è offerta in:

Facoltà Dipartimentale di Medicina e Chirurgia

Tipo corso	Corso di studio (Ordinamento)	Percorso	Crediti	S.S.D.
Laurea Magistrale Ciclo Unico 6 anni	Corso di Laurea Magistrale in Medicina e Chirurgia (2019)	comune	2	MED/09, MED/09
Laurea Magistrale Ciclo Unico 6 anni	Corso di Laurea Magistrale in Medicina e Chirurgia (2024)	comune	2	MED/09, MED/09

Stampa del 06/05/2025

Metodologia clinica [12013C2]

Offerta didattica a.a. 2024/2025

Docenti: MICHELE PIER LUCA GUARINO

Periodo: Ciclo Annuale Unico

Syllabus non pubblicato dal Docente.

L'attività didattica è offerta in:

Facoltà Dipartimentale di Medicina e Chirurgia

Tipo corso	Corso di studio (Ordinamento)	Percorso	Crediti	S.S.D.
Laurea Magistrale Ciclo Unico 6 anni	Corso di Laurea Magistrale in Medicina e Chirurgia (2019)	comune	6	MED/12, MED/01, M-PSI/08, M-PSI/05, MED/45, MED/43

Stampa del 06/05/2025

Microbiologia e Virologia [1201308]

Offerta didattica a.a. 2024/2025

Docenti: ELISABETTA RIVA, SILVIA ANGELETTI

Periodo: Primo Ciclo Semestrale

Obiettivi formativi

The aim of the course is to provide the student with the basis for an integrated knowledge of:
-the human infections and their route of transmission,
-the therapeutic strategies against virus and bacteria,
-the theoretical and applicative principles of diagnostics in clinical microbiology and finally
-the host-microorganism interactions.
The course is also aimed at providing knowledge on the antigen-antibody interactions, on the major mechanisms of human defence against microbial infections and on the pathogenesis of infections.

Prerequisiti

The correct understanding of the principles of microbiology and virology presupposes a good knowledge of the biochemistry, cellular-molecular biology. A good knowledge of physiology is also important to appreciate the major characteristics of clinically-relevant infectious agents, whether they are of bacterial or viral origin. Elementary concepts of the immune system will be also necessary in order to allow a depth understanding of the pathogenetic mechanisms of the main human microorganisms.
To take the Microbiology exam, it is necessary to have passed the Biology and Genetics examination

Contenuti del corso

Bacteriology, Mycology and Parasitology (Prof. S. Angeletti)
General bacteriology: classification, structure, sporulation, duplication, biosynthesis of the bacterial wall, genetics, pathogenesis and toxins, microbiological diagnostics, antibacterial drugs and antibiogram ; Special bacteriology: Staphylococcus, Streptococcus, Enterococcus, Enterobacterales, Mycobacteria, Neisseria, Haemophilus, Pseudomonas, Acinetobacter, Campylobacter, Helicobacter, Bacillus, Clostridium, Legionella, Chlamydia, Mycoplasmas; Medical mycology: general characteristics, structure, fungal infections, antifungal drugs; mycological diagnostics, Candida, Aspergillus, Pneumocystis. Medical parasitology: general characteristics and classification, protozoa (amoebae, flagellates, haemoflagellates, sporozoa), notes on multicellular parasites.
Virology (Prof. Elisabetta Riva, Dott.ssa Lucia De Forio)
Fundamentals on virology: Virus evolutionary position and structure. Viral replication strategies. Pathogenesis of viral infections: acute infections; persistent infections (ER). Specific and non-specific antiviral defenses. Viral Infection Control: Infection Prevention; antiviral therapy. Virus oncogenesis: DNA oncovirus; RNA Oncovirus. Diagnosis in Virology: Direct diagnosis and serodiagnosis. Special virology. Herpesvirus. Hepadnavirus. Togavirus. Flavivirus. Paramixovirus. Orthomyxovirus. Retrovirus. Picornavirus. Papillomavirus. Adenovirus and Parvoviru .
Viral infections in the various parts of the body (organ or tissue pathology).

Metodi didattici

Bacteriology, Mycology, Parasitology and Virology
Lectures with slides (available for the students after the lecturer). Scientific articles assigned during the lectures. A Tutor of the subject will be available at agreed times.

Modalità di verifica dell'apprendimento

The final examination includes a written test consisting of multiple-choice quizzes on Microbiology and Virology,. The questions will be 30 for Microbiology (Bacteriology, Mycology and Parasitology) and 20 for both Virology and 1 minute per question will be granted (Tot for the case 70 minutes). Each question may have one or more answers, but this will be adequately indicated in the text of the question itself (1 answer or more answers). The choice of the question aims to ascertain the degree of learning and the capability to rework knowledge and skills according to the training objectives. At the end of the written test and, based on the evaluation received, the exam commission will decide who is admitted to the oral-final exam. It will be the student's freedom to ask for a possible oral test. The written test will always be performed, regardless of the number of students enrolled in each session. Before the oral-final exam, each student will be shown the result of the written test.
To pass the exam with the minimum grade (18/30), the student must correctly answer 50% of the questions. The student can decide whether to take the oral-final test if at least two of the written tasks are passed. In the case of

one insufficient task the oral examination will be held in the subject not passed. A maximum of 3 points can be attributed to the oral test. These points will be added to the mark of the written test. The final grade will correspond to the weighted average of the marks acquired in the individual subjects.

Testi di riferimento

Microbiology
Antonelli G, Clementi M, Pozzi G, Rossolini GM. Principi di Microbiologia Medica, 4a Edizione 2022. CEA – Casa Editrice Ambrosiana Editore.
Virology
G. Antonelli, M. Clementi, Principi di Virologia Medica, Casa editrice Ambrosiana, 4a edizione, 2022.
D M Knipe, P M Howley, D E Griffin et al., Field Virology, Fifth Edition. Addizionale
References
Reviews and original papers from international scientific journals (distributed during the course). Websites of specific interest in the field of Microbiology and Immunology

Altre informazioni

Knowledge and understanding
The student will have to acquire a good knowledge and understanding of the molecular and cell's structures of the main microorganisms of medical interest (bacteria, viruses, fungi, protozoa, and metazoan parasites), their metabolic mechanisms. The student will also have to know the main strategies of prophylaxis and therapy available for human infections.
Applying knowledge and understanding
The student will have to acquire competence in translating the theoretic skills acquired in the field of Microbiology and Virology, into the scientific and technological contexts of the medical profession. In particular, he will have to be able to: a) face typical Microbiology and Virology, problems actively and creatively; b) act in the procedures and in the management of diagnosis in the Micro-virology lab; c) know how to plan and research in the Microbiological fields and d) dentify prophylaxis and therapy strategies available for the main bacterial and viral infections. These abilities will be achieved through theoretic-practical exercises in the classroom and in the lab as well as through the study of specific scientific articles.

L'attività didattica è offerta in:

Facoltà Dipartimentale di Medicina e Chirurgia

Tipo corso	Corso di studio (Ordinamento)	Percorso	Crediti	S.S.D.
Laurea Magistrale Ciclo Unico 6 anni	Corso di Laurea Magistrale in Medicina e Chirurgia (2019)	comune	7	MED/07, MED/07

Stampa del 06/05/2025

Otolaryngology and ophthalmology [1201509]

Offerta didattica a.a. 2024/2025

Docenti: MARCO COASSIN

Periodo: Secondo Ciclo Semestrale

Obiettivi formativi
The aim of the course is to provide students with the fundamentals for understanding otorhinolaryngological and ophthalmological diseases, including their pathogenesis, clinical presentation, diagnostic procedures, and therapeutic strategies. Additionally, the course aims to equip students with strategies for the prevention of otorhinolaryngological and ophthalmological diseases.

Prerequisiti
Basic knowledge of head and neck anatomy and physiology is required, essential for the understanding and interpretation of ophthalmological and otorhinolaryngological diseases.

Contenuti del corso
Ophthalmology
Fundamentals of embryology of the ocular apparatus.
Orbit: anatomy and disorders of vascular, inflammatory, traumatic, neoplastic origin, and those secondary to systemic diseases.
Eyelids: structure and inflammatory, morpho-structural, and neoplastic diseases.
Lacrimal system: structure and physiology of the tear secretion and excretion system; main pathologies of these structures; tear film; contact lenses.
Conjunctiva: anatomy and physiology of the conjunctiva; various types of conjunctivitis; degenerative alterations of the conjunctiva.
Cornea: anatomy and physiology of the cornea; keratitis; corneal dystrophies and degenerations; keratoplasty; refractive surgery.
Uvea: anatomy and physiology of the iris, ciliary body, and choroid; uveitis of various origins; degenerative and neoplastic disorders of the uvea.
Lens: structure and semiology; congenital alterations; various types of cataracts; cataract surgery.
Retina: anatomy and physiology; vascular, degenerative, traumatic, and neoplastic conditions; retinal detachment.
Vitreous: structure and examination methods; malformative, degenerative, inflammatory, and hemorrhagic pathologies; posterior vitreous detachment; proliferative vitreoretinopathy.
Neuro-ophthalmology: structure and physiology of the optic nerve; inflammatory, toxic, and neoplastic conditions of the optic nerve; chiasmatic syndromes.
Glaucoma: principles of ocular hydrodynamics; clinical forms of glaucoma; therapeutic elements.
Ocular semiology: clinical examination, tonometry, ultrasound, ophthalmodynamometry, fluorescein angiography, lacrimal pathways, visual acuity and refraction tests, contrast sensitivity, visual field, light sense, color sense; electrofunctional tests, imaging semiology.
Ocular microbiology: main microbiological diagnostic techniques; bacterial, viral, fungal infections.
Elements of ocular pharmacology: anesthetics, anti-inflammatory drugs, antibiotics, vasoconstrictors, vasodilators; miotics, mydriatics, hypotensive ocular drugs.
Elements of pathophysiological optics: physical and geometrical optics, ocular dioptric system; dioptric aberrations and refractive errors; accommodation; presbyopia; corrective lenses; surgical correction of refractive errors.
Ocular motility: anatomy of extraocular muscles; physiology of ocular motility, binocular vision; amblyopia; examination methods; heterophorias; concomitant and paralytic strabismus; nystagmus.

Otorhinolaryngology
Diseases of the nasal cavities: Clinical examination and anterior rhinoscopy; congenital, traumatic, inflammatory, and neoplastic pathologies; epistaxis; allergic rhinitis; nasal-sinus polyposis; foreign bodies; olfactory alterations; benign and malignant tumors.
Diseases of the paranasal sinuses: Clinical examination; acute and chronic sinusitis and their complications; craniofacial pain; maxillofacial trauma; benign and malignant tumors.
Diseases of the nasopharynx: Clinical examination; adenoids; tubal dysfunction; benign and malignant tumors.
Diseases of the oropharynx: Clinical examination; taste and its alterations; tonsillitis and focal diseases; angina; benign and malignant tumors.
Diseases of the salivary glands: Clinical examination; sialoadenitis; benign and malignant tumors; parapharyngeal tumors.

Latero-cervical lymphadenopathy: Clinical examination; congenital latero-cervical malformations; functional and radical neck dissection.
Diseases of the larynx: Clinical examination and indirect laryngoscopy; acute and chronic laryngitis; laryngeal edema; laryngeal nodules and polyps; laryngeal paralysis; congenital laryngeal malformations; dyspnea; dysphonia; dysphagia; tracheobronchial foreign bodies; tracheotomy; benign and malignant tumors.
Diseases of the ear: Clinical examination with particular attention to otoscopy; vestibular function tests; hearing tests; external, middle, and inner ear malformations; external otitis; acute otitis media; simple chronic otitis media; hyperplastic chronic otitis media; cholesteatomatous chronic otitis media; complications of acute and chronic purulent otitis media; labyrinthitis; facial nerve paralysis and its rehabilitation; vertigo syndromes and Ménière's disease; trauma to the external and middle ear; trauma to the petrous bone and labyrinth; benign and malignant tumors; congenital and acquired deafness; cochlear implants and brainstem implants; tumors of the cerebellopontine angle; tympanojugular glomus tumors; skull base tumors; posterior and anterior associated paralytic syndromes.
Lectures will also be held by Professor Maurizio Iacoangeli, Director of Neurosurgery at the University of Ancona, who collaborates with Professor Salvinelli in otoneurosurgical interventions.

Metodi didattici

Lectures integrated with the use of images and videos, seminars, and supplementary educational activities. There will also be internship hours in clinics and hospital wards with discussion of clinical cases. In-progress questionnaires will be administered to assess the students' learning progress on the topics covered. Additionally, there will be tutoring and guided study sessions with the course instructors or subject tutors, as well as practical exercises in the training rooms of the hospital.

Modalità di verifica dell'apprendimento

The exam will take place at the end of the course, during the sessions scheduled in the academic calendar, and can only be taken by students who have met the attendance requirements. The integrated exam consists of both a written and an oral test. Periodically, in-progress evaluative questionnaires will be administered. Further details about the exam and the evaluation rubric will be presented to students at the beginning of the course.
The final grade (expressed out of thirty, with the possibility of honors) involves a collegial assessment of the written and oral tests. Emphasis will be placed on the ability to interpret the clinical examination and instrumental data, and to direct a presumptive diagnosis and corresponding therapeutic procedures.

Testi di riferimento

Ophthalmology:
Malattie dell’Apparato Visivo. Eds S. Miglior, T. Avitabile, S. Bonini, E. Campos, L. Mastropasqua. Editore: Edises srl Napoli 2014 ISBN: 978 88 7959 828 6

Otorhinolaryngology:
• Rossi G., Otorinolaringoiatria, Minerva Medica ed. Torino.
• Becker W, Naumann HH et all., Ear Nose and Throath Diseases. A pocket reference, Thieme, Stuttgart
Additional recommended texts:
• Salvinelli F., De La Cruz A., Otoneurosurgery and Lateral Skull Base Surgery. Saunders Company, Philadelphia.
• Bellioni P., Salvinelli F., Semeiotica ORL, Verduci ed. Roma.
• Salvinelli F., Terapia Medica in ORL, Verduci ed. Roma.
• Maran A, Lund V, e italiana a cura di Salvinelli F., Rinologia Clinica, Micarelli Ed.

Altre informazioni

Knowledge and understanding
The student must acquire knowledge regarding:
- The main epidemiological data concerning otorhinolaryngological and ophthalmological diseases.
- The pathogenesis and pathophysiology of the most important diseases affecting these areas.
- The semiology of the main diseases affecting these systems.
- Strategies for the prevention of otorhinolaryngological and ophthalmological diseases.
- The available methods for diagnosing otorhinolaryngological and ophthalmological pathologies.
- The clinical presentation in terms of signs and symptoms of diseases affecting the otorhinolaryngological and ophthalmological systems.
- The main therapeutic strategies for diseases of the otorhinolaryngological and ophthalmological systems.
- The most innovative and crucial experimental and clinical research in the fields of otorhinolaryngology and ophthalmology.

Applying knowledge and understanding
- Apply the acquired knowledge in selecting the correct diagnostic pathway for patients with otorhinolaryngological and ophthalmological pathologies.
- Ability to make personalized therapeutic choices for individual patients.

L'attività didattica è offerta in:

Facoltà Dipartimentale di Medicina e Chirurgia

Tipo corso	Corso di studio (Ordinamento)	Percorso	Crediti	S.S.D.
Laurea Magistrale Ciclo Unico 6 anni	Corso di Laurea Magistrale in Medicina e Chirurgia (2019)	comune	6	MED/30, MED/31, MED/30, MED/31

Stampa del 06/05/2025

Patologia Generale e Fisiopatologia Generale [1201309]

Offerta didattica a.a. 2024/2025

Docenti: VITO MICHELE FAZIO, SILVIA ANGELETTI

Periodo: Ciclo Annuale Unico

Obiettivi formativi
The objective of the General Pathology Course is to provide the knowledge about pathogenic and reactive processes in order to generate a rational approach to disorders/diseases. The course of General Pathology integrates the knowledge of the biological processes to handle with the complexity and “complicatedness”, including the molecular and the organ/systemic levels, in order to understand the basis of the identification of diagnostic biomarkers and therapeutic targets.

Prerequisiti
Exams in: Physiology, Anatomy

Contenuti del corso
Part I – Genetic and molecular pathology (1° semester)
Introduction to the General Pathology and Pathophysiology (Fazio)
The biological basis of the disease: health and disease; environmental factors (chemicals; phsychological and social; diet-related); the genetic and epigenetic; health; mechanisms of homeostasis; the basis of the homeostatic control. General etiology; pathogenesis of the diseases; healing processes.

Molecular pathology (Fazio, Signori, Cioce)
Genetic and epigenetic individuality: environment and individual; pharmacology and pharmacogenomics; toxico-genomics; nutrigenetics and microbiota; hereditary and somatic genetic pathology.
From embryogenesis to senescence: the stem cells and evolution from fertilization to death. From genetic control to the epigenetic program and the environment. Signaling networks: environment-cells-tissues-organs-organism.
Stem cells, differentiation programs, tissue turno-over, environment and senescence.
Models and theories of aging
Congenital diseases and the environment.
Complex diseases and the environment.
Atherosclerosis as the paradigm of multifactorial disease
From genetic/epigenetic individuality to personalized medicine and regenerative medicine.
Technologies in reproductive medicine

Medical genetics (Gurrieri, Lintas)
The genetic load, genetic tests, genetic counselling
The genetic basis of neurodevelopmental disorders
The genetic basis of neurodegenerative diseases
The genetic basis of hereditary cancer syndromes
The genetic basis of autoinflammatory and autoimmune diseases
The genetic basis of cardiovascular diseases
The genetic basis of metabolic and endocrine diseases
The genetic basis of congenital defects and neonatal diseases

Immunology (Marra, Pantano)
Leukocyte circulation and migration into the tissue: adhesion molecules, cytokines and chemokines.
Innate immunity: pattern recognition receptors; cellular and soluble components; the inflammatory response and mechanisms of its regulation.
Histocompatibility complex and antigen presentation: subtypes and functions of antigen presenting cells; major histocompatibility complex.
Immune receptors: structures and functions of TCR and BRC; molecular and cellular mechanisms involved in the maturation of B and T cells.
T cell activation: regulation of the T cell activation and maintenance.
Lymphocyte tolerance: mechanisms of central and peripheral T cell tolerance.
Differentiation and function of T cells: CD4+ effector T cell subsets; Th1, Th2 and Th17 responses; CD8+ T cell subsets and effector functions.
B cell activation and antibody production: antigen recognition and antigen-specific B-cell activation; protein antigen

T-helper dependent response; regulation of the humoral immune response from Fc receptors.
Humoral immunity: microbe neutralization; antibody-mediated opsonization and phagocytosis; the complement system.
Hypersensitivity reactions: allergic, cytotoxic, immunocomplex, cell-mediated reactions.
Tumor immunology: basic mechanisms of immunoncology and immunotherapeutic approaches.
Immunodeficiencies.

Part II –General pathology e pathophysiology (2°semester)
The regenerative and degenerative processes (Chiurchiù, Marra)
Cellular and subcellular pathology in response to damage. Mechanisms of adapation to the damage.
Membrane transport and cellular energy disorders.
Apoptosis, necrosis, autophagy and other types of cell death.
Degenerative and molecular pathology. Ischaemia-reperfusion injury. Steatosis. Tesaurismosis.
The reactive processes: inflammation. (Chiurchiù)
Chemical, physical and biological agents.
Acute and chronic low-grade inflammation.
The systemic inflammatory response. Amyloidosis.
The repair process and the resolution of inflammation.
Cardiovascular pathology
Arteriosclerosis and atherosclerosis. Circulation in the elderly.
Haemostasis and related disorders.
The neoplastic processes (Fazio)
Stress response and adaptation; tumorigenesis and oncology.
Immunopathology (Chiurchiù)
Pathophysiology (Marra)
The lung system and its disorders: BPCO; allergy; pneumonia; lung cancer and mesothelioma.
Cardiovascular pathology: arterial hypertension; cardiac failure; heart remodeling
Alterations of blood cell counts
Water balance and electrolyte disorders
Acid-base disorders
Renal disorders
Liver disorders
Glucose metabolism and its impairment: the metabolic syndrome and type I or type II diabetes
Shock: definition and classification

Clinical pathology and laboratory medicine (S. Angeletti)
Clinical pathology and Laboratory Medicine: Pre-analytical, analytical and post-analytical variability. Conditions that can alter the results of laboratory analyzes; different drawing possibilities. Correct application of techniques for the sampling and collection of biological materials (blood, urine, other). Technique of diagnostic venous sampling. Blood culture technique in different clinical situations (timing, etc.).
Quality control and basic principles. How to control the sources of variability. General principles of the most common techniques used in laboratories. The concept of normality in biology and risk functions (normal values on a statistical basis, normal values on a biological basis, desirable values and risk functions, decision values that can be used for diagnostic or therapeutic purposes). Critical evaluation of a report (reference intervals, sensitivity and specificity of a test, predictive value, critical difference). Recall the reference values of the most common routine analysis: blood tests, urine tests, etc. Interpretation of enzymatic and isoenzymatic measurements as a diagnostic tool in specific and organ pathologies. Interpretation of the complete urine test in terms of diagnostic use. Investigations for the control of pregnancy.
Guidance on the choice and meaning of the main diagnostic tests in the most common endocrine pathologies: the diagnosis of diabetes and other endocrine disorders. Interpretation of the results of the main haematological investigations in the diagnostic address of anemia, , coagulopathies and monitoring of anticoagulant therapies. Interpretation of CSF test results. Choice, in the presence of pathologies, of serological and microbiological investigations indicated by the specific circumstances. Interpretation of serological and microbiological test reports based on subsequent clinical decisions. tests for the classification of liver failure, renal failure; of dyslipidemias; the diagnosis of myocardial infarction; hydroelectrolyte imbalances and blood gas analysis; enzymes and their diagnostic use; Tumor markers; laboratory diagnosis of the most relevant bacterial and viral infections: hepatitis, pneumonia, urinary tract infections, spent and septic shock.

Educational activities and methodology
Lessons and integrated exercitation. Lessons hours: 150
Hours of practical exercitation: 100
Medical genetics: 24 hours of class attendance, including 12 hours of practical exercitation for each student in outpatient care unit (practical exercise about the process of the genetic diagnosis in the clinic).
General pathology and physiopathology: seminars from national and international experts.
Immunology: 37.5 hours of class attendance.
Clinical pathology and laboratory medicine: The internship of this course will be carried out in the second semester and will include observation and guided activity in the clinical laboratory (clinical pathology and microbiology). Its aims are for the student to know the laboratory's working methods, and how the biological liquid samples are treated according to the various types of test. Moreover, in the simulation room, each student will be able to become familiar

with the procedures for blood sampling and, finally, in the special internship he will be able to observe sample collection and transport to the laboratory. Finally, the internship will include the presentation of specific clinical cases with the discussion of the relevant laboratory tests used for diagnostic and prognostic purposes and their specific interpretation. During the internship, the problems inherent the selection and interpretation of diagnostic data (sensitivity, specificity, predictive value, ROC curves); how to use "reference values" knowing how they are obtained or how they should be obtained; what to ask the laboratory when in doubt about the test results (how the laboratory performs quality control). To emphasize that purpose of the exercitation is not to teach laboratory techniques, but to learn what to ask the laboratory and how to use the laboratory results critically, particularly oriented to clinical problem solving (diagnosis, therapy).

Metodi didattici

The knowledge will include a partial (oral) and a final exam (written and oral).
- The partial exam (oral) is propaedeutic and it refers to the programs of “General Pathology (Medical Genetics), molecular pathology and immunology”. Knowledge assessment criteria: capacity to synthetize, to integrate distinct knowledge and to handle with complexity, to communicate in a clear and confident manner.
- The final exam (General pathology and pathophysiology, Clinical Pathology and Laboratory Medicine) evaluates the ability of the student to identify correlation between pathogenic and reactive mechanisms, as well as to understand the distinct phases of the disease at the molecular, cellular, tissue/organ/organism levels. The final exam will include a written part, that is propaedeutic to the oral:
32 questions of pathophysiology; 32 questions of general pathology (oncology; degenerative and reactive pathology); 32 questions of clinical pathology and laboratory medicine. Assessment for each section: correct answer, 1 point; mistake, -0.25 point; unanswered question, 0; the passing mark will be achieved if the candidate achieves ≥20 points to each section.
Oral exam: the student must choose an article on the molecular pathogenesis of the disease from a high-impact journal (JCR ≥ 15) and must discuss it in the first 5 minutes of the exam. This opportunity would alleviate the stress in the student, as well as it is important to evaluate the ability of the candidate to discuss themes of interest in the General Pathology in a critical, clear and confident manner.
Assessment criteria for the discussion of the Scientific Article will include:
o Capacity to understand the validity of the scientific theme and the methodological tools;
o Capacity to understand the validity of the scientific journal;
o Capacity to understand the scientific question behind the article;
o Capacity to synthetize the article and to briefly answer to related questions

Modalità di verifica dell'apprendimento

- The final mark of the first part of Genetic Pathology, Molecular Pathology and Immunology will be attributed through the application of weighted arithmetic mean. The student will pass the exam if >22/30 will be reached.
- The written exam is propaedeutic to the oral part of the exam (Pathology 2)
- The final mark will consider each part of the Course, and in particular Pathology 1, which will be considered to calculate the weighted arithmetic mean.
- In each part of the exam, to achieve a mark >27/30, the student must demonstrate the acquisition of a good/optimal knowledge of all the subjects, as well as must be able to integrate the knowledge in a logic and coherent manner. The laude will reflect the acquisition of an excellent knowledge with the capacity to retrieve the different aspects of the pathogenetic mechanisms in a systemic and highly-integrated vision.

Testi di riferimento

Supporting teaching materials
• Powerpoint slides which will be presented during the course will be available in .pdf format through the UCBM elearning portal.
• Scientific articles or other teaching materials will be discussed during the lessons
(it should be noted that the teaching material is reserved, and cannot be shared externally due to privacy and copyrights)

Books
• VI Edizione a cura di F.Mainiero, R.Misasi, M.Sorice, (“Pontieri Giuseppe M.; Russo Matteo A.; Frati Luigi”) “Patologia Generale e Fisiopatologia Generale”, Tomo 1, Piccin Nuova Libraria.
• “Neri G., Genuardi M.”; Genetica Umana e Medica, Casa Editrice EDRA.
• A.K. Abbas, A.H. Litchman, J.S. Pober, Immunologia Cellulare e molecolare, Piccin.
• Antonozzi I. e Gulletta E. Medicina di laboratorio - Logica e patologia clinica. Edizioni Piccin.

Bibliography
• TW Sadler, Embriologia Medica di Langman, EDRA Masson.
• RA Weinberg, La Biologia del Cancro. Zanichelli.
• Ciaccio M. Trattato di biochimica Clinica e Medicina di Laboratorio. Edizioni Edises
• Laposata M. Medicina di Laboratorio. La diagnosi di malattia nel laboratorio clinico. Ed. Piccin
• K. Murphy, C. Weaver, Immunobiologia di Janeway, Piccin.

Altre informazioni
- To identify the biological basis (including the logic or the ratio) that regulate the initiation, evolution and effects of the pathological processes from the molecular to the organism levels, by acquiring a deep knowledge that will allow to handle with complexity.
- To integrate the knowledge about cell and stem cell compartments, from the embryogenesis to senescence, including the interactions with endogenous and environmental factors, stochastic events and ecological pressure, in order to re-assess the general etiopathogenic factors.
- To define the pathway of the thinking process, which starts from the etiopathogenetic mechanisms toward the development of diagnostic makers and the identification of therapeutic targets.

Making judgements
- The final objective is the development of the critical scientific thinking which will allow the student to integrate the knowledge of the human etiopathogenesis and complexity (system biology/pathology), in light of the environmental factors and technology advances. The final goal of the course is to generate an independent judgement capacity and prudency, even in the presence of limited or not completed information, with a careful evaluation of the social and ethical responsibility related to the application of the own knowledge and judice.
-The theoretical-practical lessons of Laboratory Medicine will help the student to answer the following topics: what are the sources of biological variability in general and in that laboratory test; how to deal with both requests and results of laboratory tests in relation to biological variability and sources of variability (measurement, etc.). In particular, the problems inherent the selection and interpretation of diagnostic data (sensitivity, specificity, predictive value, ROC curves); how to use "reference values" knowing how they are obtained or how they should be obtained; what to ask the laboratory when in doubt about the test results (how the laboratory performs quality control). To emphasize that purpose of the exercitation is not to teach laboratory techniques, but to learn what to ask the laboratory and how to use the laboratory results critically, particularly oriented to clinical problem solving (diagnosis, therapy).
Communication skills
The student must demonstrate the capacity i) to understand molecular and cellular events, including signaling pathways; ii) to integrate processes involving interactions between cells, tissues, organs, organisms and environment, including chemical-physical as well as psycho-social factors. The integration of these two objectives will lead to the development of the ability to synthetize and to use a proper scientific language.

Learning skill
The acquisition of a critical scientific and technological thinking will guide i) the use of appropriate tools for the assessment of the validity of available data, ii) the reading of scientific articles, iii) the understanding of the articles published in high-impact scientific journals, iv) the use of scientific and technological databases, iv) the knowledge of pathogenetic processes and the generation of interpretative models and guidelines.

L'attività didattica è offerta in:

Facoltà Dipartimentale di Medicina e Chirurgia

Tipo corso	Corso di studio (Ordinamento)	Percorso	Crediti	S.S.D.
Laurea Magistrale Ciclo Unico 6 anni	Corso di Laurea Magistrale in Medicina e Chirurgia (2019)	comune	24	MED/03, MED/04, MED/04, MED/04, MED/46, MED/46, MED/05, MED/46

Stampa del 06/05/2025

Patologia Sistematica ed Integrata Medico Chirurgica 1 [1201416]

Offerta didattica a.a. 2024/2025

Docenti: MICHELE CICALA

Periodo: Primo Ciclo Semestrale

Syllabus non pubblicato dal Docente.

L'attività didattica è offerta in:

Facoltà Dipartimentale di Medicina e Chirurgia

Tipo corso	Corso di studio (Ordinamento)	Percorso	Crediti	S.S.D.
Laurea Magistrale Ciclo Unico 6 anni	Corso di Laurea Magistrale in Medicina e Chirurgia (2019)	comune	7	MED/12, MED/12, MED/18, MED/12

Stampa del 06/05/2025

Patologia Sistematica ed Integrata Medico Chirurgica 2 [1201417]

Offerta didattica a.a. 2024/2025

Docenti: FRANCESCO GRIGIONI, RAFFAELE FRANCO ANTONELLI INCALZI, MARIO LUSINI

Periodo: Primo Ciclo Semestrale

Syllabus non pubblicato dal Docente.

L'attività didattica è offerta in:

Facoltà Dipartimentale di Medicina e Chirurgia

Tipo corso	Corso di studio (Ordinamento)	Percorso	Crediti	S.S.D.
Laurea Magistrale Ciclo Unico 6 anni	Corso di Laurea Magistrale in Medicina e Chirurgia (2019)	comune	11	MED/10, MED/11, MED/11, MED/23, MED/21, MED/10, MED/11, MED/23

Stampa del 06/05/2025

Patologia Sistematica ed Integrata Medico Chirurgica 3 [1201418]

Offerta didattica a.a. 2024/2025

Docenti: NICOLA NAPOLI, ROCCO PAPALIA

Periodo: Secondo Ciclo Semestrale

Syllabus non pubblicato dal Docente.

L'attività didattica è offerta in:

Facoltà Dipartimentale di Medicina e Chirurgia

Tipo corso	**Corso di studio (Ordinamento)**	**Percorso**	**Crediti**	**S.S.D.**
Laurea Magistrale Ciclo Unico 6 anni	Corso di Laurea Magistrale in Medicina e Chirurgia (2019)	comune	10	MED/13, MED/13, MED/14, MED/24, MED/13, MED/24

Stampa del 06/05/2025

Pediatrics [1201607]

Offerta didattica a.a. 2024/2025

Docenti: PIETRO FERRARA

Periodo: Secondo Ciclo Semestrale

Syllabus non pubblicato dal Docente.

L'attività didattica è offerta in:

Facoltà Dipartimentale di Medicina e Chirurgia

Tipo corso	Corso di studio (Ordinamento)	Percorso	Crediti	S.S.D.
Laurea Magistrale Ciclo Unico 6 anni	Corso di Laurea Magistrale in Medicina e Chirurgia (2019)	comune	7	MED/38, MED/38, MED/38

Stampa del 06/05/2025

Statistics [1201105]

Offerta didattica a.a. 2024/2025

Docenti: MASSIMO CICCOZZI

Periodo: Primo Ciclo Semestrale

Syllabus non pubblicato dal Docente.

L'attività didattica è offerta in:

Facoltà Dipartimentale di Medicina e Chirurgia

Tipo corso	Corso di studio (Ordinamento)	Percorso	Crediti	S.S.D.
Laurea Magistrale Ciclo Unico 6 anni	Corso di Laurea Magistrale in Medicina e Chirurgia (2024)	comune	6	MED/01, MED/01, INF/01

Stampa del 06/05/2025

Verifica Competenze Iniziali - Chimica [1201VER02]

Offerta didattica a.a. 2024/2025

Docenti:

Periodo: Primo Ciclo Semestrale

Syllabus non pubblicato dal Docente.

L'attività didattica è offerta in:

Facoltà Dipartimentale di Medicina e Chirurgia

Tipo corso	Corso di studio (Ordinamento)	Percorso	Crediti	S.S.D.
Laurea Magistrale Ciclo Unico 6 anni	Corso di Laurea Magistrale in Medicina e Chirurgia (2024)	comune	0	BIO/10

Stampa del 06/05/2025

Verifica Competenze Iniziali - Fisica [1201VER05]

Offerta didattica a.a. 2024/2025

Docenti:

Periodo: Primo Ciclo Semestrale

Syllabus non pubblicato dal Docente.

L'attività didattica è offerta in:

Facoltà Dipartimentale di Medicina e Chirurgia

Tipo corso	Corso di studio (Ordinamento)	Percorso	Crediti	S.S.D.
Laurea Magistrale Ciclo Unico 6 anni	Corso di Laurea Magistrale in Medicina e Chirurgia (2024)	comune	0	FIS/07

Stampa del 06/05/2025

Verifica Competenze Iniziali - Matematica [1201VER04]

Offerta didattica a.a. 2024/2025

Docenti:

Periodo: Primo Ciclo Semestrale

Syllabus non pubblicato dal Docente.

L'attività didattica è offerta in:

Facoltà Dipartimentale di Medicina e Chirurgia

Tipo corso	Corso di studio (Ordinamento)	Percorso	Crediti	S.S.D.
Laurea Magistrale Ciclo Unico 6 anni	Corso di Laurea Magistrale in Medicina e Chirurgia (2024)	comune	0	MED/01

Stampa del 06/05/2025